

Flight, June 15, 1912.

FLIGHT

First Aero Weekly in the World.

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.

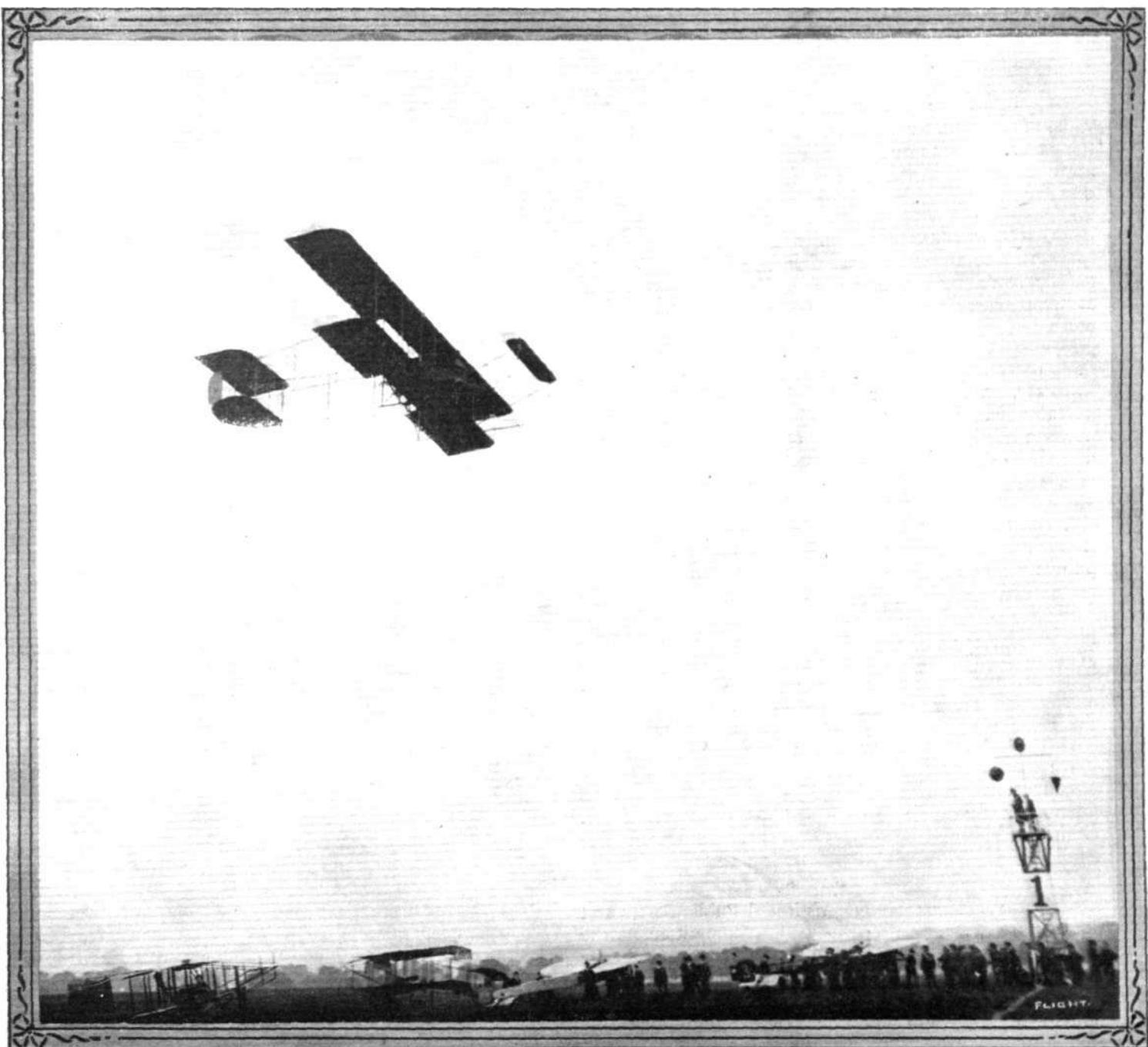
OFFICIAL ORGAN OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM.

No. 181. (No. 24 Vol. IV.)

JUNE 15, 1912.

[Registered at the G.P.O.
as a Newspaper.]

[Weekly, Price 1d.
Post Free, 1½d.]



AERIAL DERBY DAY AT HENDON AERODROME.—Pierre Verrier flying on the Maurice Farman biplane.
B 2

EDITORIAL COMMENT.

The **Aerial Derby.** Once again the *Daily Mail* has laid the aerial movement under a debt that it will be difficult to discharge. To describe last Saturday's Aerial Derby as a success would be to fall far short of the truth—it was a triumph. There have been greater races, simply viewed as races, and there have been more important events as regarded from the stand-point of mechanical progress, but there has never been an event in this or any country in which the same public interest was manifested or which gave the same opportunity to the man in the street to become acquainted at first hand with the wonderful development of flight. So far as it is possible to estimate, although it is admittedly very difficult to even approximate such figures, not less than three millions of people must have seen the competing aeroplanes at one point or another of the circular course and, if it is permissible to indulge in such calculations, it is fairly safe to say that two out of the three millions had never in their lives seen an aeroplane in flight.

Therein, to our way of thinking, lies the superlative value of such an event. We complain of the apathy of the general public in its attitude towards the movement, and that apathy, as we have many times pointed out, is due simply and solely to the fact that even now flight has no concrete and tangible meaning to the public in the mass. There is nothing familiar in it—it is too remote to arouse anything like a deep interest. It is simply a parallel of the well recognised fact that a railway accident at home involving the loss of a couple of lives arouses more interest and administers a greater shock to the public mind than an earthquake in Japan in which five thousand people are killed. The one is on the door-step, so to say, while the other is remote and therefore almost unrealisable. In order that this may be altered, flight needs advertisement of that kind which comes home directly to the people, and this is why such races as that of a week ago are of almost incalculable value to the movement. It is not the intrinsic worth of the race, either in the matter of prizes or performance, that makes it so valuable to the movement, but the widespread publicity which accrues and which could not have been secured without the assistance and influence of a journal with all the facilities of organisation and the undoubted power of the *Daily Mail*. Their support of Mr. Grahame-White in his splendid efforts to popularise flying has been generous and unstinted, it having been very definitely announced that in no shape or form do the proprietors of the *Mail* reap benefit from gate money or otherwise. That it incidentally has brought a handsome return into the coffers of the Hendon Aerodrome should be a source of congratulation by everybody. It is by this means the missionary education work can be continued, and Mr. Grahame-White deserves well of his country in this connection.

The **Accidents** **Investigation** **Committee.** The recently constituted Public Safety and Accidents Investigations Committee of the Royal Aero Club has not lost much time in setting about its work. In our issue of last week were published among the official notices of the Club the report and findings of this Committee regarding the unfortunate accident at Brooklands in which Mr. Fisher and his passenger lost their

lives. As all these official reports must necessarily be, the document is terse and carefully avoids all superfluous issues and, the circumstances of the accident being such as they were, it may strike some that the conclusions reached are not particularly illuminating. As a matter of fact, however, it is hard to see how they could be anything but what they are with the data at the disposal of the Committee. But our purpose is not to criticise—there is nothing that could be made the legitimate subject of even mild criticism in the manner in which the Committee has done its work in this instance—but simply to point out the very valuable work which this branch of the Club has inaugurated. It follows of necessity that the whole of the evidence adduced, cannot figure in a report such as the one with which we are dealing, but there must be much valuable data for future work recorded in the archives of the Club, data which will assist materially in enabling the Committee to get to the root of the causes of similar accidents, where an equal volume of evidence is not obtainable. The chief value, however, of these exhaustive enquiries and the evidence they produce, is that they place at the disposal of those interested the means of avoiding similar happenings in the future, and that is the main justification of the expenditure of time and trouble to which the members of the Committee have pledged themselves.

• • •

The **New** **War Minister.** Although at the moment of writing no formal appointment has been made to the now vacant post of Secretary of State for War, it is pretty generally accepted that Lord Haldane's successor will be his under-study, Col. Seely. This will be an interesting appointment, from the point of view of those associated with military aviation, for it is to Col. Seely mainly that we owe the enormously enhanced interest which has recently been manifested by the War Office in flight developments. All the indications point to the fact that it is he who has urged an unwilling chief towards a deeper belief in the future of the military aircraft, and that he has had no small part in overcoming the prejudices and objections of some of the professional soldiers who rule the administrative destinies of our military forces.

Of one thing we are assured, and that is that Col. Seely's appointment as civilian head of His Majesty's Army will not mean a retrograde movement so far as aviation is concerned. Rather, we should anticipate, it will help matters along still further, for we know that he is deeply interested in the possibilities, and completely realises the necessity for keeping up with the progress of our possible rivals. With Col. Seely at the War Office and Mr. Churchill at the Admiralty we need have little fear of the aerial side of our national defences being allowed to fall into the background. All the same, we must not expect too much nor must we flatter ourselves that the necessity has passed for constantly watching what is being done to keep pace with national requirements. Even a Secretary of State can only move within the limitations imposed by his colleagues, and progress in such matters as we are discussing is simply a question of finance, and the more the hands of the responsible authority are strengthened by public opinion the more likely we are to get what is wanted.

THE FIRST AERIAL DERBY.

THOSE Londoners who still have not seen an aeroplane in flight must form a very small minority. Literally, millions turned out on Saturday last to witness this race of aviators round our metropolis. At the London Aerodrome, where the race started and finished, at least 45,000 paid for admission to the enclosures, while on the

year and the year before with their tens of thousands of pounds of prize money. Not that we deplore these giving of big prizes; we sincerely hope they will still benefit the movement by a continuance of the munificent financial encouragement they have given in the past. But all that concerns us at the moment is that



THE FIRST AERIAL DERBY.—The machines in line for the starting at the Hendon Aerodrome.

adjacent slopes—forming most excellent grandstands—were massed several thousands more. The same state of affairs applied at every point around the course of 81 miles. Esher Common, as a landmark was almost unrecognisable. It was, Hamel told us afterwards, absolutely black with people.

There is no mistaking that, thanks to the *Daily Mail*, Mr. Harold Barlow, and the Grahame-White Aviation Co., the race took a big hold upon popular imagination. Indeed, we should guess that more enthusiasm was evoked over this contest for a one hundred guinea trophy and cash prizes of £450 than was aroused by the *Mail* last

as a sporting event, as an encouragement to individual flyers or firms, and as an advertisement to aviation generally, the flying Derby succeeded admirably and we can only hope that steps will be taken to ensure it as an annual event.

From quite early in the morning until about noon a steady downpour of rain did not make things any too promising for the race. But it cleared off about midday, and conditions improved greatly as the afternoon wore on. The wind at the aerodrome, measured at the height of the anemometer pole, was a negligible quantity. Things above, however, were not quite so ideal, for Cody arriving on his



Sopwith on his Bleriot, the first man back to the London Aerodrome on Saturday in the First Aerial Derby, who, however, was disqualified for passing inside the Purley control.

Green-engined biplane, from Farnborough, early in the afternoon, reported quite a deal of wind and *remous* in the upper reaches.

Preceding the start of the Flying Derby, the speed handicap for the silver trophy and cash prizes of £100, presented by the proprietors of "Shell" motor spirit was run off. Had it not been that in the second of the heats Hamel gave up and Sopwith came down before he had finished the course, this event would have been considerably more exciting than it proved. There were six entrants—Hamel, Turner, Verrier, Cody, Sopwith and Raynham, the latter two having flown over from Brooklands earlier in the day on their respective machines, a 70-h.p. two-seater Blériot and an A.B.C.-engined Wright biplane. The race was decided in two heats of four laps, and a final of eight. In the first heat were Raynham, Verrier, and Lewis Turner. All three flew the course exceptionally well, hugging the corners, and banking over at the turns as much as their machines would allow. Specially to be commended was Verrier. He handled his big-spanned Maurice Farman, and swung round the pylons as if he were flying a light and fast monoplane instead of a large weight-carrying biplane intended for severe military work. Raynham won; he

the sulks on the occasion of the machine's first public appearance in England, for everyone likes the look of this neat little monoplane as much as they have confidence in Sippe's piloting. A wave of the flag and he was off. At one minute intervals followed Sopwith on his 70-h.p. two-seater Blériot, Hamel on an almost identical machine, Verrier on the Aircraft Co.'s 70-h.p. Maurice Farman biplane, Moorhouse on his 50-h.p. Radley-Moorhouse, Maurice Guillaux on a 45-h.p. Anzani-Caudron monoplane, and Valentine on his 50-h.p. Bristol.

Two of them took passengers. Hamel took Miss Trehawke Davies, with whom he has flown so far and so often. Verrier took Mr. Ivor Castle, a photographer, who, besides his camera, operated the map and compass. Their adventures are given by Mr. Castle himself further on and form an interesting contribution to the events of this historical race.

Of the starts, that of Guillaux on the tiny Caudron, gave the best impression of speed. The machine just bounced along the ground and up into the air for all the world as if it were overjoyed at getting back to its proper element again. Verrier put his biplane to climbing and left the aerodrome at a considerable altitude. The



THE FIRST AERIAL DERBY.—At Kempton Park turning point, showing Sopwith's Blériot passing round the big shaft at Kempton Park which marked the limit of the course. The congestion of traffic with sightseers watching the flyers, as seen in the photograph, was practically the same completely around the entire course.

beat Turner by 35 secs., Verrier coming in third, just 6 secs. behind. The second heat was run between Cody, Hamel, and Sopwith. It was a gift to Cody for the reason explained above. Nevertheless, it was very exciting for the first round or two. Then came the final. Raynham triumphed again, for his superior speed showed up against Turner's old-pattern Farman-type. In the matter of course flying there was little to choose between them. He won by 53 secs.

A delay ensued before the starting of the event that had created such widespread enthusiasm. Instead of getting away at a quarter past four, as was originally announced, the first competitor, Sippe, was not signalled to leave until 4.38. As the machines were being brought up to the starting line a hush of suppressed excitement fell over the masses of onlookers. Everyone strained their necks to catch a glimpse of what passed there. Then an engine spit out its characteristic note. It was that of Sippe's new Hanriot monoplane, and by the sound of it and by the appearance of the machine leaving the ground one could easily tell that it was far from running satisfactorily. It was a great pity that its engine should get a fit of

others kept much lower. All were soon out of sight and we settled down to wonder why there were not more starters out of an entry of sixteen. Cody was much missed. Everyone was disappointed that he did not line up with the others. The reason, we believe, of his not starting was that only having 60-h.p. on his biplane instead of his fond 120-h.p. he considered there was not enough chance against Maurice Farman, the only biplane to start.

As it happened, had he started he would undoubtedly have relieved the Grahame-White Company of the £50 prize that they had offered for the first biplane home, provided it was not amongst the first three, for Cody could have been relied on to finish the course. Gordon Bell did not turn up, neither did Busted on the Bristol monoplane.

Lieut. Lawrence's Blackburn monoplane was not ready. Lewis Turner did not see much fun in making an attempt on the machine at his disposal. Jules Nardini intended flying over to the start from Dover, but was delayed on setting out until half-past five in the evening. Further, it was said that his machine—a *Perdussin*—



THE FIRST AERIAL DERBY.—The spectators waiting for the passing of the aviators on the edge of the river at Purfleet.

had caught fire near Chatham, so that he could not reach Hendon in any case, let alone compete. Moineau had planned to fly over from France on a Breguet. He did not arrive. Lieut. Porte came late. He flew over from Brooklands on a 60-h.p. Anzani-Deperdussin—a British-built machine—arriving just before six o'clock. B. C. Hucks, regarded as a very likely winner, on the 70-h.p. Nieuport that, until recently, was Grahame-White's property, could not start; for, landing with a little sideway on after a practice flight, his tyres had come off, and were in rather too chewed-up a condition to render them of much further use in this world. As luck would have it, he had no spares. Having pondered over all these issues, the need of tea stole upon us.

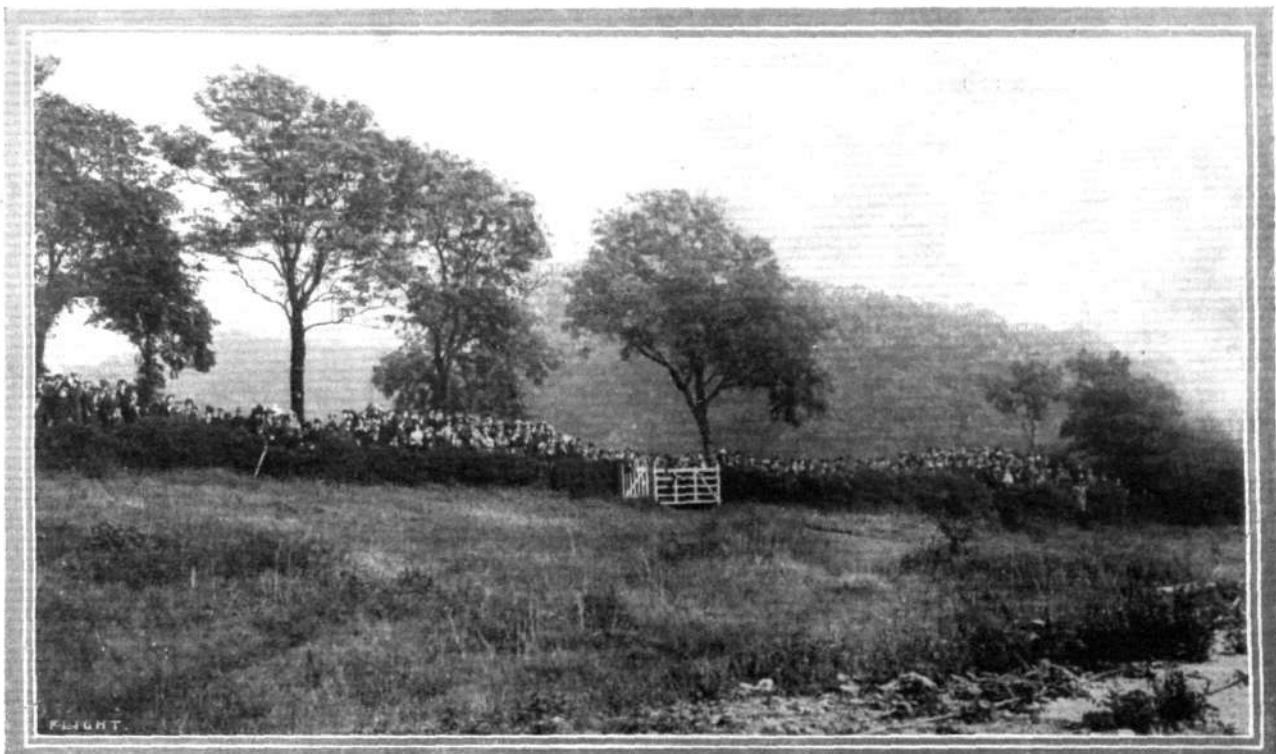
Sopwith was the first man home. Soon after six o'clock a speck was discerned low down over the trees in the Mill Hill direction. He it turned out to be, and, reaching the aerodrome, he was

welcomed with a burst of cheering, for he was naturally put down as the winner, and an easy one at that. But the observers at Purley ruled otherwise. They said he had not rounded the mark properly; so, on that score, he was disqualified. Sopwith, himself, confessed to not having recognised it, but reckoned on have gone well outside it for there he took an exceptionally wide turn.

Some ten minutes afterwards another speck became visible on the horizon. For some reason it did not come closer but disappeared among the trees.

That was Guillaux on the Caudron. He had the bad luck to run short of petrol when within sight of the goal. To miss an excellent gold trophy, £250, and, not least, the honour of winning the race, through the lack of a beggarly pint or so of petrol is, indeed, hard luck of the worst possible type.

Hamel and his fair passenger appeared six minutes later at quite



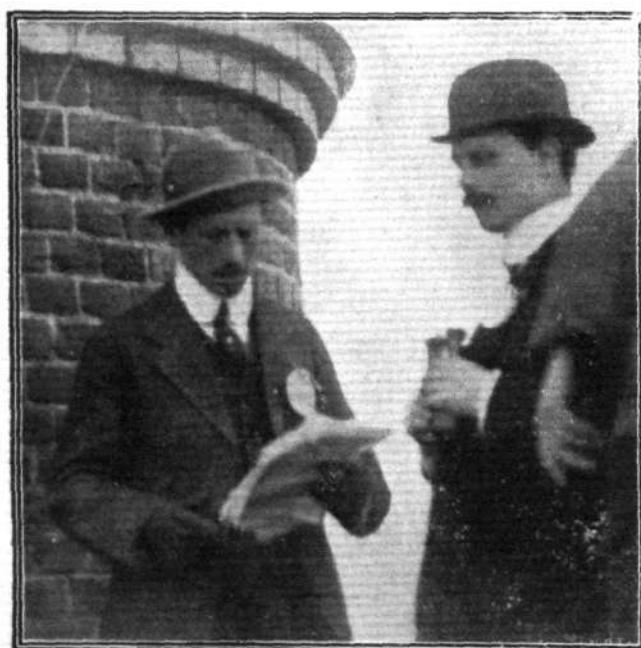
Part of the human ring round the entire course for the First Aerial Derby on Saturday, as seen at Purfleet, where one of the main turning points for the competitors was.



Hamel, on his Blériot, leaving Epping behind in his flight in the First Aerial Derby, as photographed from the top of Epping Tower.

a fair height. He *vol planed* across the finishing line at 6.18, then over went his rudder and round the machine heeled to the right, then to the left, and landed. There was renewed cheering, and little boys who had been calling out "Postcards of Sopwith," altered their tune to "Postcards of Hamel." Both pilot and passenger were immediately made the target of innumerable photographers and interviewers.

Hamel said that south of the river the going was not at all pleasant. There were fogs and rain to contend with. North of the river it was altogether better. He had seen Sopwith on in front, but the only other machine that he had noticed after the start was the little Caudron with Guillaux at the lever. This machine had



THE FIRST AERIAL DERBY.—Official observers—Mr. Harry Turrill and Mr. Thomas—on the top of Epping Tower.

literally romped past him, and was out of sight ahead inside of two minutes.

At 6.42 Moorhouse arrived back, and Valentine followed at 7.10. Both had adventures to relate. Moorhouse had missed the course soon after passing Purley, and had deviated away to Sevenoaks, where he recognised his error and turned back. He too noticed the Caudron pass him standing. Valentine said he missed his way somewhere in the Epsom neighbourhood and alighted. The man of whom he inquired his true course was too stupefied by his sudden descent to do more than continue gaping speechlessly. He had to fly over to a neighbouring field, where there were more people, before he could get the required information.

Thus we had the gratification of seeing four Englishmen home first. The only regret was that all the machines and engines taking part were of Continental origin with the exception of the Bristol and the Radley-Moorhouse.

Let us hope that at the next flying Derby—and we doubt not it will be held—we may see all the winners, Englishmen, on British-built machines, driven by British engines.

The official times for the course of 81 miles were :—

	h. m. s.
T. O. M. Sopwith (70-h.p. Gnome-Blériot monoplane)	1 23 8 $\frac{1}{2}$
	(Disqualified)
1. G. W. Hamel (70-h.p. Gnome-Blériot monoplane)	1 38 46
2. W. Moorhouse (50-h.p. R.M. monoplane)	2 0 22
3. J. Valentine (50-h.p. Gnome-Bristol monoplane)	2 26 39



FIRST AERIAL DERBY.—Lord Lonsdale, who took an active interest in this historical event, and who consented to present the prizes to the winners.

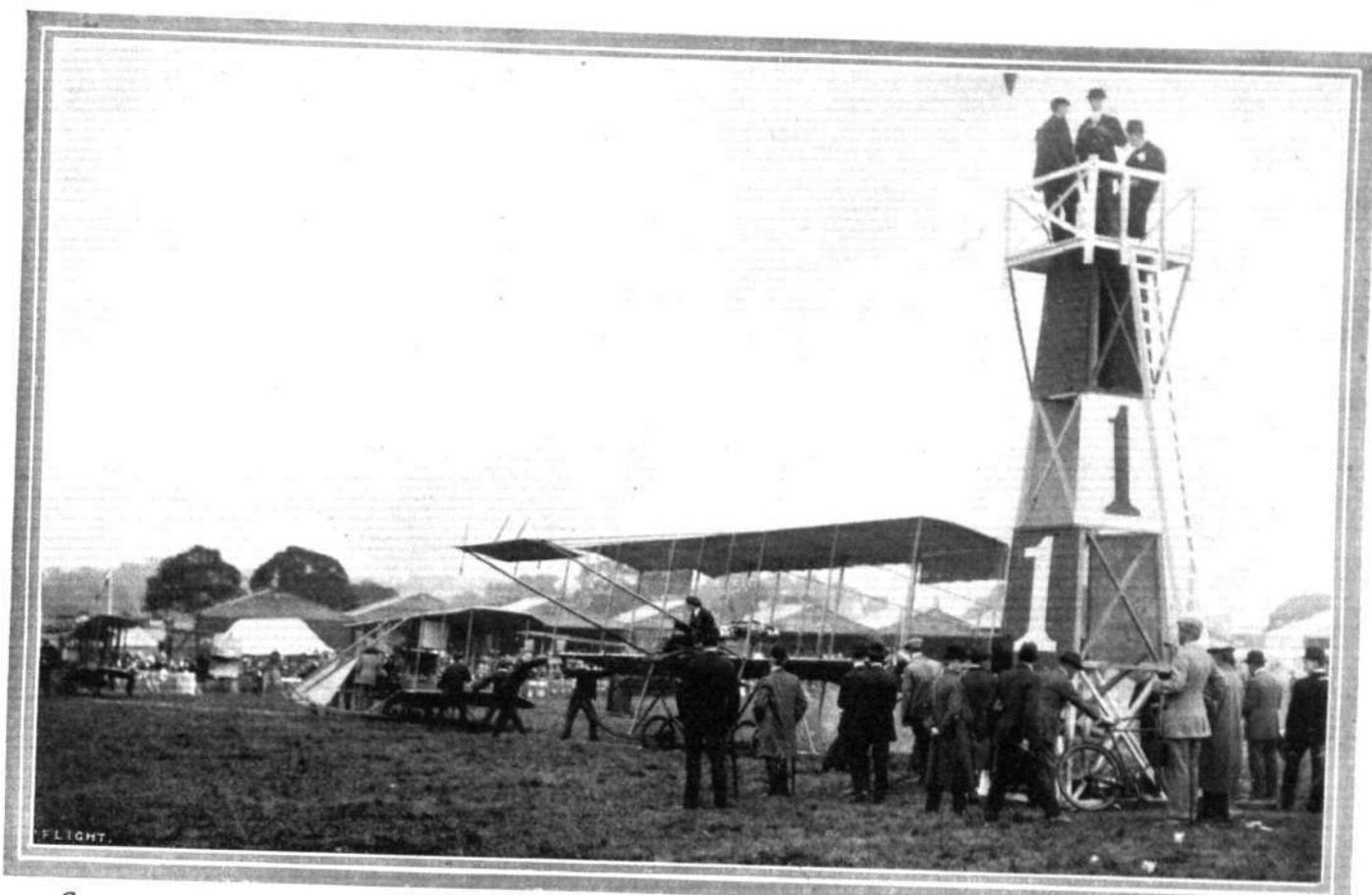
Sippe was fated to trouble with his engine. From the very start it never gave more than 950 revs., but kept petering along at about 900, until it eventually fizzled right out and dropped him down at Hounslow. Here he tinkered with it for some time and, in spite of the delay, was the third to round the mark at Kempton Park. Reaching Esher, he lost count of his direction, and those members of the Brooklands community who had come that far to see a section of the race noticed him careering about overhead to pick up his true course. Soon he noticed a monoplane—it was Hamel—and set out to chase it. But his engine, apparently, did not like the idea, for it let him down once more at Mersham, the machine pulling up across the furrows of a ploughed field. After his experience of landing in a cornfield near Abbeville, Sippe rather fights shy of landing on anything but good brown earth. Here he thought it hopeless to continue, and decided to get back home to Brooklands as soon as he cou'd. But still his engine thought otherwise, and he came down in another ploughed field a mile and a-half away. His landing-chassis did not seem to mind in the least.

Verrier did not get back to the aerodrome until quite late in the evening. There was a great deal of fog about when he returned, and it was lucky that he was able to find his way under those conditions. He had been flying for 3½ hours, had been to the sea-coast and back, and had descended at Hounslow.

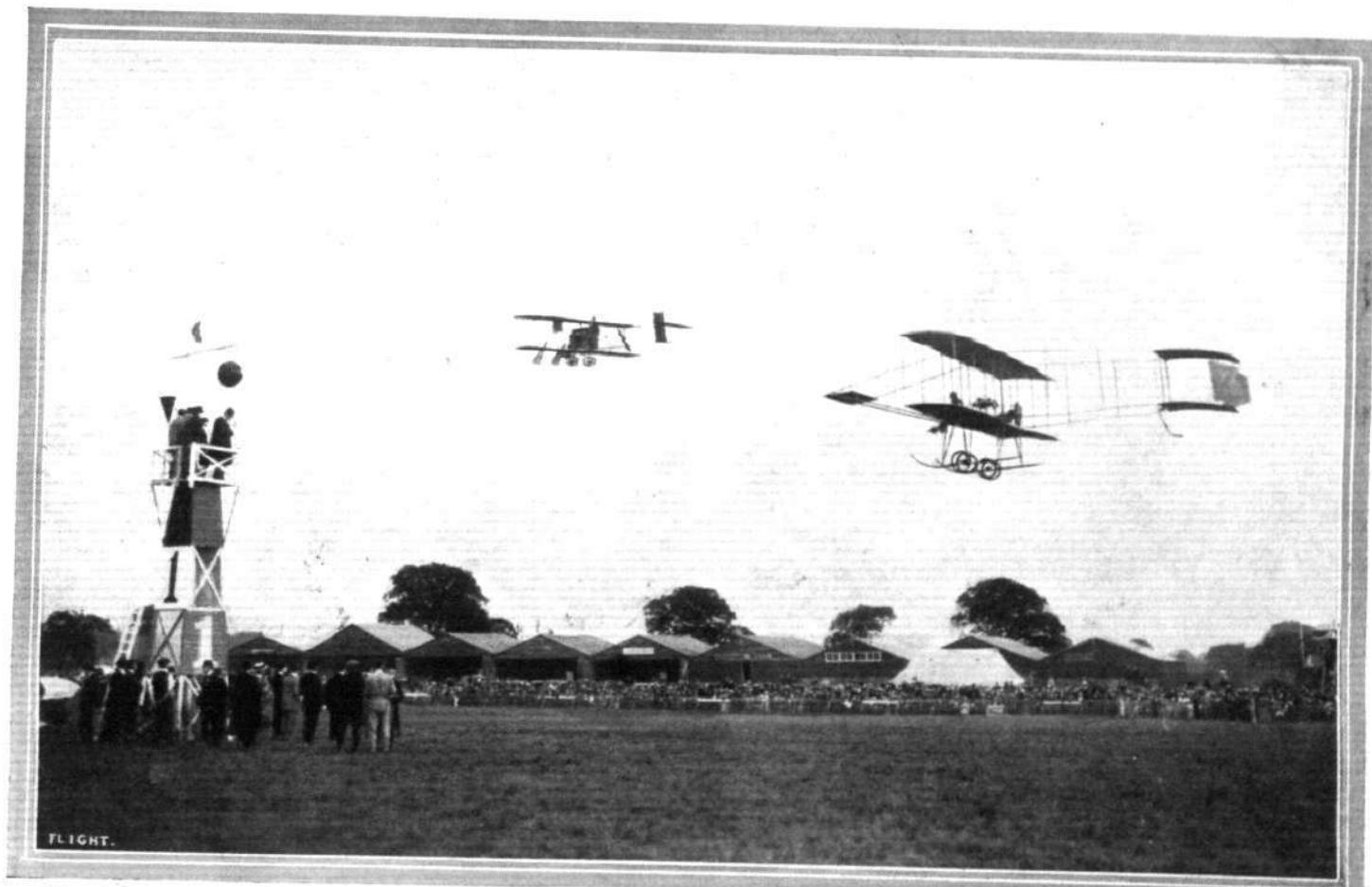
The light by this time was rapidly failing, and a heavy ground mist covered the aerodrome. To the public the day's flying was finished. But things yet remained to be done at the aerodrome. It was wished to discover if searchlight flying was practicable.

JUNE 15, 1912.

FLIGHT



Competitors lined up for the start of the "Shell" Speed Contest at Hendon Aerodrome on Aerial Derby Day.



Raynham, on the Burgess-Wright, and Lewis Turner putting up a fine finish in the order named for the "Shell" Speed Contest at Hendon on Aerial Derby Day.

THE AERIAL DERBY.

By a PASSENGER.

ALTHOUGH the Editor of FLIGHT has done me the honour of asking me to write a description of my flight as a passenger in the Aerial Derby on Saturday last, I am afraid that I can add very little to the description I have already written in the *Daily Mirror*.

The security, however, that I felt in the magnificent military Maurice Farman biplane, with M. Verrier as pilot, was, although I have had the opportunity of flying in a good many machines, with a good many pilots, a perfect revelation to me. Notwithstanding the fact that to miss one's way in a black fog, 2,000 feet from the earth, without knowing in the least degree one's whereabouts is not exactly pleasant, as I told Mr. Holt Thomas, by whose courtesy I was a passenger in the machine, when driving home with him from Hendon on Saturday night, I felt more secure in the air than driving down the Edgware Road. The Maurice Farman fully deserves the great reputation it enjoys in France and other countries.

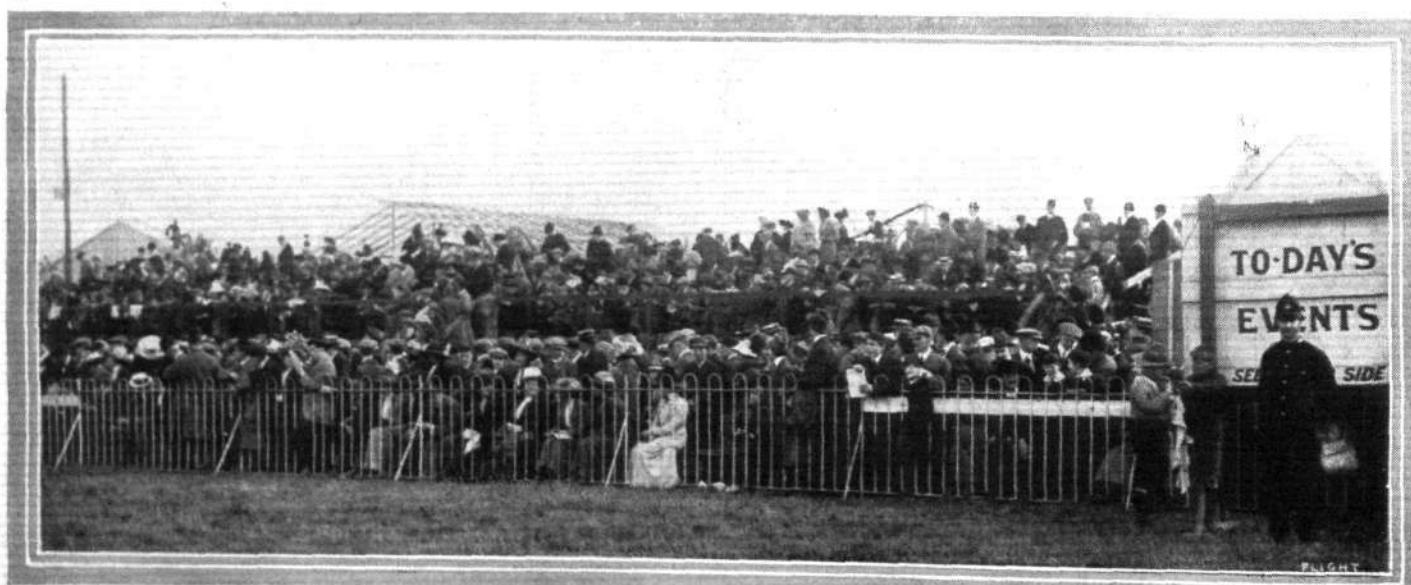
It was the first time I had taken part in a great air race, but I hope it will not be my last. Before starting, as the compass for the machine had not arrived, it was decided that the map of the circuit should be strapped to M. Verrier's back so that I could assist in directing him. At 4.41 p.m. we got off beautifully, and soared up at a great pace, and although we only took a half circuit of the Hendon Aerodrome, before we left it, we were over a 1,000 ft. up, and had doubled that altitude before we cleared the Welsh Harp. This height of 2,000 ft. we maintained during our voyage, which in the ordinary course of events, we should have accomplished in about 1 hr. 40 mins. at the most, as the Maurice Farman machine, great biplane as it is, has a splendid turn of speed. M. Verrier is a very highly skilled cross-country flyer, and I am quite convinced that in maintaining this height, he was fully protecting me from any accident should the motor have stopped.

Once clear of Hendon, we headed straight for Kempton, with the engine pulling splendidly. Harrow on the Hill stood out like a mole hill, at that great height. It was hereabouts that we encountered the first of our competitors, a monoplane, which appeared to be flying miles below us. In looking down at it over the fuselage of the machine it appeared like a dragon fly, hovering close to the earth. I called M. Verrier's attention to it, and he replied that it was about 500 feet up, although it did not look more than 10 feet. At Kempton Park we saw the big chimney stack quite clearly, and as we rapidly drew nearer we saw a monoplane trying to circle it, miss it, and then go back and round it properly. We dropped a thousand feet, so as to enable the judges to see our number properly, and then rose up for Esher. A reservoir showed us that we were right, and I may mention that water is far and away the best landmark in cross-country flying. It is unmistakable. Over the river we went, just being able to distinguish little cockleshell boats, and passed by Esher Station and Sandown Park to Sutton. From there the Russell Hill Schools were our next point, a landmark clearly seen near Purley. Up to this point we had no difficulty in finding the correct direction, not a single landmark had been missed. At Bromley, however, our next point, we had our first warning of haze. We had reckoned on seeing the Crystal



Mr. S. F. Cody taking a turn round Hendon Aerodrome in his biplane on Saturday last.

In the sixpenny enclosure trouble was experienced in getting the people to leave. Even at that hour they were still keen and wanted more flying. A battery of Rushmore lamps had been requisitioned to carry out the test. An acetylene projection was installed on Grahame-White's biplane. One, considerably more powerful, was shining from the judge's box, and a third, a miniature naval arc searchlight, threw its beams from the top of pylon No. 1. The current for the latter was derived from a dynamo belt driven from the flywheel of a standard fifteen Lancia car. Mr. W. L. Stewart, of Lancia's, and his lieutenant, Mr. C. R. Abbott, were both there to see that their engine fulfilled its part of the work. Grahame-White, on his biplane, acting well up to his reputation as the first to fly under such conditions, did the rest as he soared above our heads and away over the country side, rendered visible only by those bars of light and the head lamp on his machine.



The new grand stand at Hendon Aerodrome upon the occasion of the First Aerial Derby.

Palace, but to my surprise and discomfiture, as I was partly responsible for M. Verrier's guidance, I found this impossible. Small, warm, woolly drifting clouds, began to wind about us, and steadily the mist got worse ; at Sidcup we could only occasionally see the sun, but Purfleet was reached without incident, and then suddenly without a word of warning we ran straight into the black heart of a thundercloud. It was pitch black, above, below, and all around us, a most uncanny sight and feeling, and yet never for one moment had I the slightest sense of anything but security in this machine, and in the hands of, by this time, my trusted pilot. Thanks to the arrangements of Mr. Holt Thomas who never takes a risk if it is avoidable, and who had instructed M. Verrier to turn should we encounter fog, the plunging into this black mass was avoided. Having, however, no compass—for we had no time to fit it before starting—in a few minutes we were absolutely lost. We tried to turn back to Purley, but we might as well have tried to reach Mecca. We fondly hoped that Purley would soon appear in sight, but by the distance we travelled, we must have been a very long way from it. It was only by a piece of good luck we suddenly obtained a glimpse of the sun, which gave us the information that we were travelling at a very high rate of speed, due South. When we wished to arrive at Hendon, and we found ourselves suddenly going straight for Brighton, there was only one thing to do, namely, to turn. This we did, and after travelling at full speed for nearly an hour, I was overjoyed to see the two high towers of the Crystal Palace. When these appeared in sight, I judged from the direction we were taking that we were making for St. Paul's, so we swerved to the West, and later on picked up the reservoir at West Molesey. By this time it was getting dark, and the haze was rising again, and as M. Verrier was having a somewhat trying experience for his first cross-country flight in England, and as he personally was still in the dark as to where he was, I suggested that we should alight for a little while. Accordingly, we planed down from our Olympic height of 2,000 ft. into a hayfield full of long grass, which I believe to be about as bad a landing place as is possible, the Maurice Farman

machine, however, with the splendid landing chassis, making nothing of it. We settled down as lightly as a leaf. From some of the large crowd who suddenly appeared from nowhere, we ascertained that we were in a field near Hounslow, and only about 15 miles from Hendon ; owing to the long grass (it was really *very* long grass), and the small space to get up in, M. Verrier, who was kindly lent a car by Mr. H. S. Powell, motored round to find a better getting-off place to pick me up, thinking that he could get out of the field where we had landed in more easily by himself. He soon found one, and cramped though the space was in which he had to rise, my taxi soon arrived for me again. Within fifteen minutes we were back in the Hendon Aerodrome, after having planed down in triumph from our usual height of 2,000 ft. to the enthusiastic spectators waiting for us.

The above description hastily dictated at the request of the Editor, feebly expresses a flight which is, I believe, a record cross-country flight for England, and for a good many other countries as well. After leaving Hendon we flew steadily for 3 hrs. 20 mins. without alighting. I have been up in a good many aeroplanes, but I can truly say that I have never been up in such a comfortable one, or flown with such a complete sense of safety. Notwithstanding the somewhat trying conditions we encountered, I can only say, may my next cross-country flight be in a military Maurice Farman biplane, and may my pilot be M. Pierre Verrier.

IVOR CASTLE.



Mr. Corbett Wilson has a Mishap.

A NUMBER of very fine flights have been made in the neighbourhood of Kilkenny recently by Mr. Corbett Wilson, but on June 5th, after a particularly good one, the machine made a sudden landing on a deceptive bank, the chassis and propeller being damaged. Repairs are being carried out, and it is hoped before long the machine will be flying again.



THE FIRST AERIAL DERBY.—Just a bit of the enclosures at the London Aerodrome on Saturday.



The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

Royal Aero Club General Committee.

A MEETING of the General Committee of the Royal Aero Club was held at 166, Piccadilly, London, W., on Tuesday, the 11th inst., at 5 o'clock. There were present:—Mr. Roger W. Wallace, K.C., in the chair.

Royal Aero Club—Mr. Griffith Brewer, Prof. A. K. Huntington, and Mr. C. F. Pollock.

Aero Club of Ireland—Mr. John D. Dunville.

Bristol and West of England Aero Club—Mr. A. E. Catford and Mr. P. Evans.

Aeronautical Society of South Africa—Major A. M. Rogers.

Harold E. Perrin, Secretary.

The Minutes of the meeting of the General Committee, held on September 26th, 1911, were read and confirmed.

Apologies for absence were received from the East Riding Aero Club, Manchester Aero Club, North-Eastern Aero Club, Scottish Aeronautical Society, and Yorkshire Aero Club.

Finance.—The Financial Statement for the year 1911, showing a balance in hand of £88 10s. 5d., was submitted and adopted.

The Capitation Fees received to date for the current year, amounting to £217 10s. 8d., were reported.

The Finance Committee for the current year was appointed as follows:—Mr. A. E. Catford, Mr. P. Evans, Mr. John D. Dunville, Prof. A. K. Huntington, and Mr. Roger W. Wallace, K.C.

F.A.I. Conferences.—The chairman reported on the conference of the Fédération Aéronautique Internationale, held in Paris in April, dealing with the new rules of the F.A.I. He further reported on the meeting of the special commission of the Fédération Aéronautique Internationale, on the law of the air, held at Brussels in May.

Vienna Conference.—The various questions to be discussed at the Vienna Conference to be held this month, were considered, and the following delegates were appointed to attend on behalf of Great Britain:—Mr. Griffith Brewer (cartographic committee, June 17th and 18th). Mr. Roger W. Wallace, K.C., Mr. M. O'Gorman and Capt. Murray Sueter, R.N. (General conference, June 20th, 21st and 22nd).

THE Ae.C.F. GRAND PRIX.

SOME of the most famous pilots have been nominated to take part in the two-days' race over the triangular cross-country circuit for the Grand Prix of the Aero Club of France. The start takes place at 9 o'clock on Sunday morning from the Angers Aerodrome, the competitors following one another at two minute intervals. They will have to cover three circuits on the first day, making a stop each time of not more than half an hour's duration at Angers, while one stop of not more than a quarter of an hour may be made on each day at Cholet and Saumur. A further four rounds of the circuit will be made on Monday. The details of the competition were given in our issue of April 6th, 1912. The full distance of the seven rounds of the course is 1,100 kiloms. The prize will be awarded on speed, but machines carrying passengers will have their time reduced one-sixth for each passenger weighing not less than 75 kilogs. Prizes will also be awarded on speed alone. Among the pilots nominated to take part are many well-known names, including Garros and Hamel on Blériots, Renard and Fourny on Maurice Farman biplanes, Fischer on a Henry Farman biplane, Helen and Gobe (Nieuports), Gaubert (Astra-Wright), Allard (Caudron biplane), Bielovucic (Hanriot monoplane), Vedrines, Vidart, Prevost (Deperdussin) and Tabuteau, Bedel, Morane (Morane-Saulnier monoplanes). Altogether there are 35 entrants and it should prove a vastly interesting competition. The unsettled weather has prevented many of the competitors trying the machines over the course, but on Monday Gobe had one of the Nieuports out for an hour and forty minutes, while Helen on another one flew 157 kiloms. in 1 hour 7 mins.

During this week several of the competitors have flown their machines over to the Avrille aerodrome, near Angers, which will be the headquarters for the event, and from which the official start will be given and the finish take place. On Tuesday, Gaubert and Bedel arrived from Villacoublay and Garros from Issy. On Wednesday, a petition signed by a large number of the entrants was sent to the *Commissaire général*, M. Pierre Gasnier asking that the start should be given at 5 a.m. each day instead of at 9 a.m., on account of the dangerous *remous* which are so prevalent at the latter hour.

Military Aeroplane Competition, 1912.

At the request of several British Aeroplane Manufacturers the Club approached the War Office with a view to obtaining a postponement of the date of the competition. Mr. Howard T. Wright, Mr. R. L. Charteris and the Secretary attended at the War Office on the 5th inst. and explained the position of the manufacturers. As a result of this interview the War Office has now announced that the trials will be postponed till July 31st, 1912, and that entries will be received up to June 21st, 1912.

Balloon Contest at Hurlingham.

The second balloon contest will take place at Hurlingham on Saturday, June 22nd, 1912, when the challenge cup presented by Mr. F. Hedges Butler will be competed for.

The entries will close at 12 o'clock noon on Wednesday, the 19th inst., and members wishing to compete should notify the secretary on or before that date. The entrance fee is 10s.

Members of the Royal Aero Club will be admitted to the Hurlingham Club free, on presentation of their Royal Aero Club membership cards.

Members of the Royal Aero Club can obtain special vouchers for the admission of their friends, who are not members of the Royal Aero Club, to Hurlingham, from the secretary of the Royal Aero Club. These vouchers will admit on payment at the entrance gates.

Presentation of Lantern Slides.

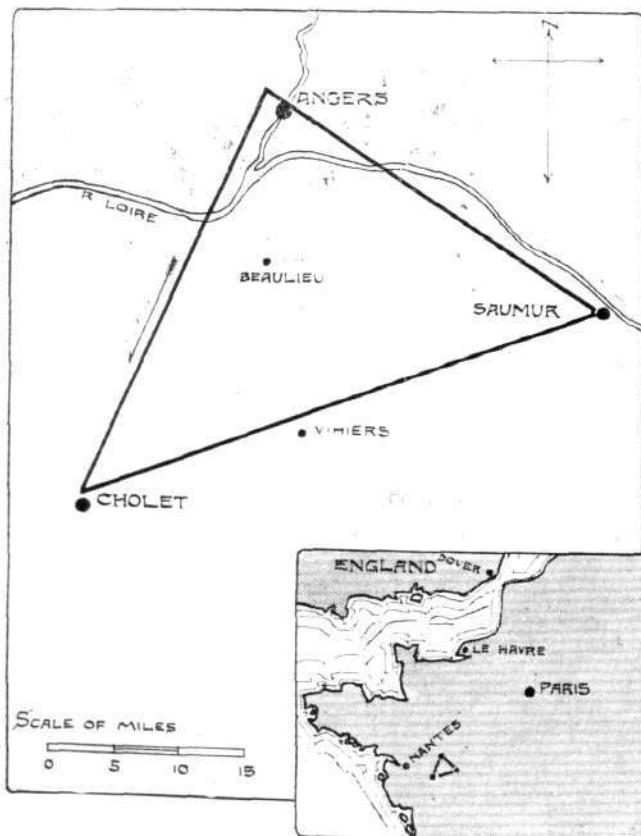
Mr. A. V. Roe has very kindly presented to the Club an interesting collection of lantern slides dealing with his early machines.

Golf Match.

A match by singles and foursomes between the Royal Automobile Golfing Society and the Royal Aero Club was played on the Huntercombe Club's Course on Friday the 7th inst. The result was a win for the Royal Aero Club, who secured the singles by 5 games to 3, and the foursomes by 3 to 1. On the day's play, therefore, they proved successful by 8 points to 4.

166, Piccadilly.

HAROLD E. PERRIN, Secretary.



THE KING AND AVIATION.

RANELAGH CLUB, on the afternoon of last Tuesday, was the setting for another demonstration of the practical interest that His Majesty King George V is graciously taking in the progress of aviation. There, after a display of piloting worthy of his reputation of being one of the most popular of our British pilots, Gustav Hamel was presented to the King by Sir Sidney Greville. It had been arranged that Hamel, flying his new 70-h.p. two-seater Blériot monoplane, with Capt. Mark Kerr, R.N., as passenger, should arrive on the famous polo ground at a quarter to five. He kept well to schedule time, for he came in sight at the moment when Their Majesties and Princess Mary drove into the club grounds in the Royal car. Hamel appeared at about 3,000 ft. up. Ten minutes had elapsed since his start from Hendon. Landing there on the polo grounds is not an exceptionally easy matter at any time, for trees and buildings are numerous, the turf is very smooth and "fast," and the two greens convenient for landing are terminated by, in the case of the first green, a steep bank some 8 ft. in height, and in the case of the second a neat little hangar that was erected some two

years ago to accommodate Grahame-White's machine when he was giving his splendid exhibitions there. The wind, too, as on Tuesday last, was also to be reckoned with. Hamel made a wide circuit over Barnes Common, returned and flew over the Club grounds, manœuvred at the far end in preparation for alighting, and landed neatly. Before the machine came to rest both Hamel and his passenger were standing up in the machine changing their flying kit for something more suitable to the environment at Ranelagh. His Majesty had meanwhile proceeded to the Royal pavilion by the main polo ground, where the finals for the Aldershot day contests were in progress. Soon after six o'clock, the ground was cleared and Hamel, rising from the adjacent green, interested the King by a series of spectacular evolutions. For fifteen minutes he held the spectators spellbound, then alighted, touching ground just in front of the Royal pavilion and coming to rest further on. He was summoned by the King, who congratulated him and conversed with him for some few minutes on matters aeronautic.



AIR EDDIES.

£1,000 for an aviator! It sounds rather a lot of money to pay for a pilot these days, but, nevertheless, that was the fee that Mr. H. Barlow, the donor of the cash prizes in connection with the Aerial Derby, paid the Grahame-White Aviation Co. for the release of that excellent pilot, B. C. Hucks, from his six months' contract with them.

Evidently Mr. Barlow is not going to let any doubt exist about his taking up aviation. He has bought over from Grahame-White his 70-h.p. two-seater Nieuport and the 50-h.p. Gnome "Baby." Besides that he recently went to Paris with Hucks and gave an order for a new two-seater Blériot. Then there may be another monoplane coming along to take the engine from the "Baby."

They reckon on staying here in England for the rest of the flying season to pick up their share of any prizes going and then to ship the whole lot to Australia. Certainly, with such a stud of machines and such a pilot as Hucks, there ought to be somethin' doin'.

A friend of mine who has just returned from a visit to some of the larger French flying grounds tells that the Deutsch de la Meurthe Blériot *berline* is flying quite strongly at Etampes.

It, perhaps, will be remembered that just about the time when the show was being held in Paris, sundry rumours were flying around that the machine flew all right with the pilot alone on board but couldn't for the life of it lift one passenger let alone four.

Whether the rumour was true or not I shouldn't like to say. At any rate it is doing good stunts now.

The 100-h.p. Gnome, with which it was originally equipped, has been replaced, apparently, by one of 140-h.p. Now the machine goes out in all winds, not seeming to mind them a bit. Besides it has been carrying about 300 kilos. of lead ballast.

Cody, I hear, is building a monoplane, after having championed the cause of the biplane for so long. He is, nevertheless, still remaining true to his thirst for power, for he is installing an Austro-Daimler motor of 125-h.p., driving a Chauvière propeller, geared down 50 per cent. The body, in section, is to be star-shaped, a form of design on which the shape of other sections of the machine are being based. We are all awaiting further news with considerable interest.

That reminds me that another of our well-known constructors is after much higher power. He was not long ago looking out for a pair of 250-h.p. engines to stick on a hydro-aeroplane. I wonder if he has hit on them yet.

Isaacson has turned out a totally new aero engine. In its appearance it is quite different from his last type. The present one has

quite a Gnome look about it, and the workmanship looks to be quite up to Gnome standard, not at all a bad standard to go by. Although like that engine, in being of the radial seven-cylinder variety, it differs by not being a rotary, and by having a geared down drive. It is designed to give 60-h.p. at a normal speed of 1,200 revs. per minute. One great point it has—that it fits standard Gnome mountings. Altogether it looks like a particularly good job. Let us hope it will more than fulfil its present great promise of success—for we should all dearly love to see less foreign engines about and more Isaacsons, Greens, N.E.C.s, A.B.C.s, and Dormans.

It is quite a good thing for aviation that individual members of the Commons should interest themselves in aviation as Mr. H. C. Lane-Fox, M.P. for the West Riding of Yorkshire, has been doing at Salisbury quite recently. There he has been flying with Gordon England on Bristol planes, and has expressed himself as not only highly delighted with his experience, but as considerably enlightened as to the value of an aeroplane for military use.

It seems that the new Hanriot monoplanes are getting right ahead down Rheims way. They have now six different types of the new machine flying, and one extra, an all-metal monoplane, is in preparation. The latest 'bus to leave the works is a three-seater, equipped with one of the new 12 litre 80-h.p. Gnome engines. On it Bielovucie carried out very promising tests as recently as Thursday week, rising to 1,200 ft. in 4½ mins., and that with an extra load on board of nearly 700 lbs. in the form of two passengers and ballast. From the photographs I have seen of this new machine the cockpit appears to be exceptionally roomy, and certainly looks like being able to accommodate five including the pilot.

Mr. Maurice Ducrocq, their concessionaire over here in England, figures on entering two of these new three-seaters for the military trials. They will probably have Gnome engines of 100-h.p. in place of the new 80-h.p. that is being used at Rheims. Sippe will undoubtedly pilot one, and there is quite a chance of Bielovucie coming over to fly the other.

Bielovucie, or "Bielo," as he is affectionately known in French flying circles, was an old Voisin man, first coming into prominence by virtue of his long flight between Paris and Bordeaux. From a biplane he was converted to the mono., and has since been doing a lot of work on the Deperdussin. Now he is with Hanriots, and up to the present he is the only one that has flown the new three-seater. His style of flying, so I am told, is very reminiscent of Weymann, for he gets up to all the little tricks of that master pilot and includes just a few of his own invention. In trying out a new machine, he does not content himself with straight ahead flying. He does Dutch rolls and switchbacks and bangs the machine about in the air a bit, just to see that everything is all there.

"OISEAU BLEU."

FROM THE BRITISH

Brooklands Aerodrome.

WIND and rain prevented flying until the evening of Wednesday last week, when Busted and Raynham opened proceedings with a couple of solos in a fair wind. Lieut. Parke then got away in great style on the new military Avro, and, in spite of the fact that it was the machine's first time out, he headed straight for Farnborough, where he duly delivered her some 17 mins. later. In the meantime Arthur was putting up an excellent show for his *brevet* on the Gnome-Bristol mono., keeping at 500 ft., and making well-banked turns well inside the ground. On the biplane, Hotchkiss was up with Holyoake and Agnew, while Becke made several circuits solo both right and left-hand. Lane was doing straights, and Bettington some rolling on the Bristol-Anzani monoplane. The Deperdussin racer was out, piloted first by Gill, and then for straights by Dawes, who lost control of the machine while coming up the ground, and after a series of horrible evolutions succeeded in completely smashing machine and engine by the crates standing at the sewage-farm end of the sheds. The pilot, as usual, escaped with hardly a scratch.

Macdonald was out tuning up Vickers No. 2 for school work, and Sopwith and Raynham were busy instructing Alston, Herbert and Webb Bowen.

On Thursday morning Hotchkiss was flying with Agnew, Holyoake and Becke, the latter doing figures of eight solo afterwards. Bettington did a good morning's rolling on the Anzani monoplane. Raynham was teaching Alston, Herbert and Webb Bowen, and Macdonald was tuning Vickers No. 2. In the evening Lieut. Gill was trying the Deperdussin *brevet* machine, and Bellairs rolled on the taxi. Busted made a trial on the Bristol biplane then changed over to the monoplane, flying for about a quarter of an hour at 500 ft. Hotchkiss gave instructions to Anderson, Holyoake and Agnew, while Bettington reached the hopping stage on the Anzani monoplane. Raynham after a short solo was flying with Howell, Powell and Webb Bowen.

On Friday morning Raynham was up with pupils on the Farman, and then Hedley made several short flights, solo. Hotchkiss flew with Anderson, Wilmer, Agnew and Holyoake, the last named being in the pilot's seat. Capt. Becke was practising for his *brevet*, and Bulkeley made some straights with improved landings. Lieut. Bellairs and Capt. Brooke-Popham were on the Deperdussin taxi, and Porte made two trips on the two-seater, tuning up for Saturday's race. In the evening everyone got to work early, in spite of a steady drizzle the wind being absolutely calm. Capt. Darbyshire and Knight both did straight lines on the Vickers. Capt. Becke passed for his *brevet* on the Bristol, flying at 200 ft. and making good landings near the observers. On the same machine Busted took up Holyoake and Agnew, and Kemp who has now joined the Bristol Company as pilot, took Wilmer round. Bulkeley then did some short flights, and Lane and Bettington were both doing well on the Anzani monoplane. At the Sopwith school all pupils received instruction, and Sopwith also tried the 70-h.p. Blériot for the first time with the fuselage covered in. It appeared, if anything, slightly faster.

On Saturday morning nothing was done until 11.30, when Sopwith on the Blériot and Raynham on the Burgess-Wright both left for Hendon. They arrived almost together having experienced a little difficulty with the rain and low lying clouds. In the afternoon Lieut. Porte made several flights on the two-seater Dep., and after engine adjustments went off to Hendon where he arrived without incident having made the journey at about 2,000 ft. Capt. Brooke-Popham and Capt. Macdonald were both on the Taxi and Gill was trying the *brevet* machine. Darbyshire and Knight made some short flights on Vickers No. 2. On the Bristol, Hotchkiss gave flights to Anderson and Agnew and Kemp to Wilmer and Reid. Bulkeley had several solos. In the late evening Raynham arrived back from Hendon having been delayed at Hounslow by valve trouble. He then gave instruction to Alston and Webb Bowen.

On Sunday morning Brooklands was suffering from a castor oil famine, due to the strike. On Sopwith's Farman Powell made a nice solo flight, and then Raynham gave instruction until supplies gave out. In the afternoon an original scheme was started by Hotchkiss, who got up a free sweep among the spectators for passenger flights. The fortunate winners were Misses Barrow and Gill and Mrs. Spencer. Sopwith and Raynham were busy with passengers, and later with pupils—Alston, Howell and Webb Bowen. About 5.30 Moorhouse returned from Hendon, landing after flying round outside the ground, having had a good journey. Hotchkiss and Kemp both gave lessons on the Bristol, while Agnew and Bettington both made solos.

On Monday morning Hotchkiss was up with Hope and Wilmer on the Bristol. On the same machine Agnew did straights, and Bulkeley flew for 15 mins. 200 ft. up. On Sopwith's Farman, Alston, Webb Bowen, Howell, Hedley, and Powell all made excellent solos. In the evening Kemp took up pupils, and Bulkeley

FLYING GROUNDS.

made a good flight. Bettington and Lane were practising on the monoplane. At the Sopwith school all pupils were doing straights, showing excellent progress. The Vickers was out with Darbyshire.

On Tuesday morning Hotchkiss was up with all pupils. Capt. Dawes and Bellairs were out with the Deperdussin taxi, and also with the *brevet* machine, rolling. On the Farman, Webb Bowen, Howell, Herbert, and Powell all made improved flights and solos until the wind rose.

Eastbourne Aerodrome.

BOTH on Thursday and Friday last week the weather was somewhat boisterous and work was therefore confined to the sheds. Gassler and Fowler were out on Saturday. On Monday, Lieut. R. J. Bone, R.N., received his first lesson and proved to be a very apt pupil. He soon learnt to control the Anzani and did several excellent straight rolls at good speed. Fowler gave an exhibition flight and Gassler also put in some practice. Work was resumed early on Monday when Gassler and Lieut. Bone put in some good work. The new workshops are now nearing completion and Mr. Fowler hopes shortly to have them in use.

Filey School (Blackburn Aeroplane Co.).

ON Friday, last week, Brereton was out in afternoon, testing new Gnome machine, specially prepared for exhibition flights during the coming season. He made several flights in the Bay, flying well out to sea at a good altitude.

Sunday morning, early, Brereton had the Gnome machine out again. He circled in the Bay and then struck inland, making a fine circuit via Hummanby and back to the sheds. He then made another flight in a rather tricky wind, doing figures of eight over the sea. In the evening the Gnome and the Isaacson machines were brought out and Brereton made some very fine flights, rising on one or two occasions to a great altitude. Some of his *vol planés* were exceedingly neat, and his landings perfect. Although the wind proved rather gusty, the machines were very steady. Afterwards Brereton took several passengers up in the Isaacson 'bus. The engine has just been fitted by the Isaacson Company, with their latest type ball bearing rod and shaft.

Freshfield, Lancs.

THERE was no flying at Freshfield Thursday and Friday last week, owing to the weather. On Saturday morning, Mr. Higginbotham took out his machine for several trials with a new elevator of smaller area than the old one and found it a distinct improvement, not being so sensitive to sudden gusts of wind. In the afternoon it poured with rain and stopped all work.

Liverpool Aerodrome (Waterloo, near Liverpool).

ON the 8th inst. a turn was taken out of the school machine engine after overhauling, and proved quite satisfactory. On the 10th inst., Birch and Hardman were both out making long straights in a tricky wind, and Melly was out on the 2-seater, giving passenger flights to Mr. R. C. Jones and to his niece (Miss Clare Melly), the weather being too uncertain for any long distances.

London Aerodrome, Collindale Avenue, Hendon.

Grahame-White School.—Monday morning, last week, weather was none too good, a mixture of fog, *remous*, and a ten-mile wind. Major Liles out first, doing circuits on the Farman, followed by Mr. Roupell; then Capt. Salmond, and Messrs. Wynne, Kershaw and Rathborne with straights on Farman, and Baroness Schenk on Howard Wright. In evening, rain too heavy for flying.

Next morning was hopeless for pupils—heavy showers with bright sun between, which surely means *remous*. In the evening the school was busy, in spite of trickiness of air; Captain Salmond doing straights with instructor, Mr. Kershaw straights solo, and Mr. Blackburn, the school's new pilot, testing the old school machine. Unfortunately, he ran into a sheep and killed it, at the same time chipping the propeller so badly as to throw it out of balance, the machine having to be returned to hangar pending replacement. Meanwhile, the Howard Wright busy, Mr. Turner taking passengers over the surrounding country, and Messrs. Morris and Roupell learning the new machine preparatory to getting their *brevets*.

Wednesday morning was hopeless. In evening, pupils out from 7 to 9 p.m. Messrs. Wynne, Salmond, Rathborne and Scully doing straights with instructor; Mr. Kershaw, straights solo; Mr. Morris, circuits, and Mr. Hoelscher, a new pupil, passenger straights on school Farman, and Mr. Morris afterwards doing excellent circuits on Howard Wright, in spite of bad running of his engine.

Pupils were out at 5 on Thursday morning, working till 6.30, when wind got up. Messrs. Scully, Fuller, Salmond, Rathborne, Wynne and Hoelscher doing straights with instructor, and Major Liles solo straights on Farman, while Baroness Schenk doing straights, and Messrs. Morris and Roupell circuits on the Howard Wright.

In evening, Captains Nicholas and Salmond, and Messrs. Rathborne, Scully, Wynne, Kershaw, and Hoelscher doing straight flights with instructor, on school 'bus, weather being too gusty for solo flights ; Messrs. Grahame-White and Turner passenger carrying.

School machine was laid up Friday, owing to inlet valve trouble on engine, so school work confined to the pleasant task of *brevet*-getting on Howard Wright, Messrs. Morris and Roupell getting through easily, in spite of a 10-mile wind.

In evening, Mr. Grahame-White and Mr. Lewis Turner were out on new Farman machine for tests and adjustments ; Captains Salmond and Nicolas, Lieut. Rathborne, and Messrs. Hoelscher, Wynne and Fuller doing straight flights with instructor, and Mr. Kershaw solo straight flights.

Rain on Saturday morning stopped school work, the only flights being some straight flights by Mr. Kershaw. In afternoon, no school work, owing to circuit of London.

A good deal of flying was done on the Sunday after the Aerial Derby, the best show being made in the evening—when nearly everyone had gone home. Captain Salmond in the morning was out for straight flights, but stopped by punctured tyre. Machine unfortunately left out and caught in thunderstorm, doing considerable damage to planes owing to severe shrinkage of fabric. The early part of the afternoon was rather stormy with hardly any wind, except for a 10-m.p.h. gust now and again. Lewis Turner was the first up (doing a few switchbacks) on biplane No. 9 just before 4 o'clock. At about a quarter past Grahame-White took a turn on the same machine making several circles over the trees at the far end of the aerodrome, coming back after about seven minutes. He made an exceptionally neat landing in front of the enclosure, but was off again immediately and proceeded to give one of his demonstrations. At 4.42 p.m. the Maurice Farman was brought out and started a busy afternoon of passenger carrying with a pretty flight out and around the aerodrome. Mr. Weir's Blériot and the Grahame-White Farman were also up. The former has undergone a slight alteration since last week, being converted from a "flying plough" to the former type of Blériot by the removal of the long central skid and the substitution of the two chain tail-skids. Although the central skid undoubtedly pulled the machine up very quickly, it also pulled up a considerable amount of the aerodrome as well. Just before 5 o'clock Moorhouse departed for Brooklands on the R. and M. monoplane.

Quite a lot of passengers were taken up during the rest of the evening, Verrier carrying about eight (including Mr. Holt Thomas), and Grahame-White and Lewis Turner about nine or ten between them. During the evening some solo flights were put in by Sabelli on the small Deperdussin, Weir on his Blériot, and Hamel on the same machine. The last named gave a magnificent display of airmanship. His banked turns seem to be getting sharper every week. It was really a very pretty sight, for the little monoplane is quite white, and looked remarkably well against the fleecy sunlit clouds. Later in the evening, Mr. Ewen took a walk to the aerodrome and spent a short time looking around. He seems to be getting on very well, and we hope to see him back at work again soon.

Blériot School.—Mr. Weir came down to the Aerodrome on Sunday afternoon last week to take delivery of his new 50-h.p. Gnome-Blériot, and Mr. Hamel who was also on the ground for the purpose of taking up his 70-h.p. tandem two-seater, put Mr. Weir's machine through its aerial paces, after which Mr. Weir took his machine over and did some flights, expressing himself very pleased with his new mount ; showing meanwhile that he had lost none of his accustomed skill in handling a machine.

On Monday, Mr. Weir, determined to make the utmost of the time at his disposal, was out on his machine from 5 a.m., making little excursions over the surrounding country until about 8.30 a.m., the wind, however, being somewhat too strong for pupils.

Tuesday and Wednesday, weather was still unpleasant for schoolwork. The new 50-h.p. Gnome-Blériot, which Mr. R. B. Slack is going to use in the International Correspondence School "Circuit of Britain" arrived at the ground on Thursday, and being of the very latest type, came in for a large amount of admiration.

Next day it was raining off and on nearly all day until evening, when Mr. Hall managed to put in a couple of straight flights, and M. Pierre Gaudillon, a new pupil, had his first exercise in rolling practice and did a remarkably good run across the ground and back, showing himself very quick at getting the knack of keeping the machine on a straight course. In the evening also, Mr. Crawshaw was on his 50-h.p. cross-country Blériot for about 20 minutes, flying as usual very well indeed.

It was raining hard on Saturday, and very misty in the early morning, the wind rising as the mist cleared, making it impossible for any schoolwork to be done.

After the departure of the competitors in the "Aerial Derby" in the afternoon, however, Mr. Weir had his 50-h.p. Blériot brought out and did a very good flight in a 12-15 mile an hour breeze.

W. H. Ewen School.—The weather has been none too favourable during the past week for pupils, but a fair amount of work has been put in. On Thursday and Friday mornings the pupils were out at 4 a.m. and, after trial flights by Mr. Marcel Desoutter, got in some good practice, Messrs. Edmund and Ware making several nice flights on the Deperdussin and Blériot. Thursday evening saw the arrival from France of the clever Caudron pilot, M. Guillaux, who immediately tested the little 45-h.p. Anzani racer. On Saturday morning, M. Guillaux was again out on the Caudron monoplane, giving a wonderful demonstration of his skill and the capabilities of the machine. On Monday, after a short flight by Mr. Desoutter, Messrs. Ware, Lawford, Edmund and James put in some good flying. Messrs. Edmund, Ware, James and Warren were again doing some good work on Tuesday on the Blériot, and M. Baumann put in two splendid flights on the Deperdussin. During the week, M. Dubois, who has been learning the Blériot, Deperdussin and Caudron, at the school, qualified for his *brevet*, rising to over 200 ft., and flying his flights with beautiful regularity.

Salisbury Plain.

Bristol School.—No flying was possible all day Monday, last week, on account of the tempestuous state of the weather.

Nothing out doors was done Tuesday morning, the weather being far too rough, however, towards the latter part of the afternoon, Bendall was making a test on biplane No. 55, Pizey also ascending, having with him a lady passenger. Lieut. Fielding then carried out a fine solo on biplane No. 55, Jullerot giving a trip to Lieut. Fox in one of the Bristol two-seater monoplanes, afterwards making a solo in the same machine. Lieut. Ercole was out for two fine flights on one of the biplanes, whilst Mr. Lister made his first solo in great style, completing a circuit and landing very well. Lieut. McArthur was also out for a solo, and had a very good trip, landing very nicely.

There was a very bad wind on Wednesday morning, rendering flying out of the question. However, by the afternoon things had improved somewhat, and Pizey was flying with Mr. Featherstone for tuition in a still rather gusty wind. Lieut. Ercole carried out two solos in really fine style, and Mr. Lister made a good flight, landing quite well. Other solos were also made by Lieut. Pickles and Mr. Prendergast. Bendall was up with Mr. Lister for tuition, whilst Gordon England ascended with Dr. Cordner. Pizey was out alone on one of the two-seaters, afterwards taking Bendall up with him, taking with them a spare wheel to Col. Smeaton who had just previously ascended for a trip and burst a wheel at Fargo. The new wheel was quickly fitted and both machines flew back to the sheds. Mr. Smith Barry and Lieut. Fielding were both out for solos on biplane No. 55, making several circuits.

After the usual test of the conditions, Thursday, Lieut. Ercole set out to undergo the necessary tests for his certificate, which he successfully accomplished, his observers being Colonel Smeaton, Capt. Allen and Lieut. Fielding. Pizey was up on one of the two-seaters, first with Bendall, and then with Mr. Smith Barry, Bendall afterwards flying with Mr. Lister and Dr. Cordner on one of the school biplanes. Major Boyd Moss made a fine solo, afterwards ascending for another trip, and landing very neatly each time. Lieut. Pickles in the two flights he made showed himself to be quite ready to undergo the tests for his *brevet*. Mr. Lister also gave evidence of the remarkable progress he has made in a good solo, completing a wide circuit and landing very gracefully. Lieut. Fielding was giving instruction to Mr. Featherstone, and Mr. Smith Barry got in some practice on biplane No. 55. Gordon England was testing a modified Bristol tractor biplane just received from the company's works at Filton, and found the machine a splendid flyer, rising to a good height in a very short time and landing very gently.

In the evening Pizey was the first out, taking Mr. Featherstone for tuition, Bendall afterwards taking this same pupil up twice. Gordon England, Mr. Smith Barry and Lieut. Fielding were all out for solos, the latter also giving a tuition trip to Mr. Featherstone. Lieut. Pickles made two exceptionally fine solo trips, reaching about 800 ft., which he maintained for several circuits, and then landed by means of a cleverly executed *vol plané*. Major Boyd Moss was out for two good flights, and Col. Smeaton made a couple of circuits. Pizey, with Lieut. Fielding as passenger, made a clever flight on one of the Bristol two-seater monoplanes, flying for over half-an-hour and maintaining an altitude of 1,300 ft., later Pizey was up on the same machine with Col. Smeaton. Gordon England made a very good flight on the Bristol tractor biplane, in the first remaining up for about half-an-hour, and in the second having a passenger with him for about 20 minutes.

Pizey was out early on Friday morning, taking up Mr. Featherstone, and then giving a flight to a prospective pupil, then going up for a solo on one of the school monoplanes, and afterwards taking Dr. Cordner for a couple of circuits. Capt. Allen was up for about half an hour, and landed quite well. Good solos were made

by the following on biplane No. 66a, Major Boyd Moss, three trips, Mr. Prendergast, two, Mr. Lister, two, and all of the pupils showed signs of remarkable progress. Col. Smeaton made four trips on one of the monoplanes, and Gordon England took out the Tractor biplane for a flight, afterwards ascending with Mr. H. C. Lane-Fox, M.P. for West Riding, Yorkshire, flying a wide circuit, the distinguished passenger expressing himself highly pleased with the Bristol machine and also with the experience. Mr. Lane-Fox was also taken for a trip on one of the school biplanes by Gordon England.

Heavy rain and wind prevented any flying Saturday morning, but very useful work was done in the hangars on the motors and tuning up the machines. In the evening, England made two tuition flights with his brother, also taking up Mr. Smith Barry. Jullerot then took up Mr. Geoffrey England for passenger trips. Bendall gave two tuition trips to Lieut. Halahan, also giving flights to two passengers, and then to Mr. Rawson Shaw. Jullerot gave height flights to Mr. Geoffrey England and Lieut. Fielding, flying over Bulford and Shrewton. Capt. Allen was out for a good solo on one of the two-seaters, landing very well, other solos being made by Mr. Prendergast, Mr. Lister, Dr. Corder, and Col. Smeaton, whilst Mr. Smith Barry took Mr. Rawson Shaw for tuition in making spiral glides. Lieut. Fielding was up for a solo, making a couple of circuits and bringing the day's work to a conclusion.

Very little work was possible Sunday on account of the boisterous state of the weather.

Royal Flying Corps.—On Wednesday of last week there was some real good flying, several of the Corps being out. Lieut. Porter started the ball rolling, making a good flight for some time in a

biplane, and Lieut. Conner followed with a passenger. Capt. Loraine made one of his graceful flights with a passenger, and Corp. Ridd and Staff-Serjt. Wilson were on biplanes doing scouting practice. Staff-Serjt. Brookbank started rolling.

Ridd and Wilson were first out on Thursday, followed by Lieut. Porter, Lieut. Conner, Capt. Loraine, all making useful flights at good heights. Staff-Serjt. Brookbank brought the morning's work to a close by going for a solo in a biplane. He descended at too sharp an angle, and the machine landing on the elevator was somewhat damaged.

Rain prevented out-door work on Friday, but on Saturday Capt. Loraine was first out, making a good flight on the Deperdussin monoplane, which has been fitted with new racing wings. Lieut. Porter followed, also Lieut. Conner, and Ridd and Wilson, on biplanes, doing scouting practice around the plains. In the evening several officers and N.C.O.'s were out. Capt. Sykes was visiting the sheds.

Sunday, Lieut. Porter made one flight, but work was curtailed by the misty weather.

In spite of a stiff wind, the air-corps were at work early on Monday, Capt. Loraine being first out on the Deperdussin monoplane. Capt. Fox was also up on biplane F 7, after which it was piloted by Corp. Ridd and Staff-Serjt. Wilson. Lieut. Porter was up at 1,000 ft. on biplane, and finished with a neat *vol plane*. Capt. Fulton paid a visit to the Plain, and witnessed the flying in the evening. Barrington-Kennett arrived from Farnborough at 8 p.m. on the Nieuport monoplane, and circled the aerodrome twice before coming down by a fine *vol plane*.



BRITISH NOTES.

Military Aeroplane Competition, 1912.

AN amended notice issued by the War Office in regard to this competition, notifies that, following on representations by the Royal Aero Club, the latest date for entries has been extended from June 15th to June 21st in those cases where the Judges Committee are satisfied that there are reasonable grounds for the delay on the part of the competitors. The date for the delivery of the machine at the Army aeroplane sheds at Larkhill has been postponed from July 15th to July 31st, 1912.

More R.F.C. Appointments.

IT is officially announced this week that Capt. E. B. Loraine, Grenadier Guards; Capt. G. W. P. Dawson, 1st Royal Berkshire; and Lieut. B. R. W. Bear, 37th (Howitzer) Battery Royal Field Artillery, Capt. G. H. Raleigh, 1st Essex, and Lieut. G. T. Porter, Royal Garrison Artillery, have been appointed to the Military Wing of the Royal Flying Corps.

A Silver Medal Award.

THE Council of the Royal Society of Arts has awarded the Society's silver medal to Mr. A. E. Berriman, technical editor of FLIGHT, for his paper on the efficiency of the aeroplane, which was read before the society this session.

The "Amphibian" at Harwich.

SEVERAL very good flights were made by Commander Samson at Harwich last week-end on the Short hydro-biplane. On Friday he started from his shed at Shotley, and flew along the shore and out to sea, trying to detect some submerged submarines. Altogether the machine was out for about three hours carrying out various experiments. On Saturday morning it made its appearance about 6 a.m., and flew up the River Stour to Mistley, afterwards going back, and then making a similar trip along the Orwell, then in the direction of Felixstowe, and finally back to Shotley. Later in the morning Admiral Tupper was taken for a trip over the harbour. Admiral Lowrie was given a similar trip on Monday.

The Daily Mail Flying Tour.

CONTINUING the story of the *Daily Mail* flying tour, M. Salmet, on the 5th inst., went on from Exeter to Tiverton, and from Tiverton to Barnstaple, covering the 45 miles at a speed of 60 miles an hour. A stop of an hour was made at Tiverton. Three days were spent at Barnstaple in fitting a new motor, and on Saturday M. Salmet started for Ilfracombe, but was brought down at Westward Ho! by a thunderstorm. There he gave several demonstrations, and in the evening paid a visit to Bideford. The next day he flew to Ilfracombe and back, afterwards going on to Bude, in Cornwall, passing over Clovelly, but failed to recognise it owing to the rain.

AIRSHIP NEWS.

A New Astra Dirigible.

A NEW airship, designed for scouting purposes by the Astra Company, was given her first trial on the 10th inst. She was cruising for an hour in the early morning over the country to the west of Villacoublay, and carried fifteen persons on board, including a number of military officers. The new airship, which is called "Conte," is 64'4 metres long, and the greatest diameter of the envelope is 13'9 metres, the capacity being about 7,000 cubic metres. Two Chenu motors of 75-h.p. are fitted, and drive two Astra propellers. This initial trial trip is understood to have given complete satisfaction.

"Clement Bayard III" Back at La Motte Breuil.

LEAVING Issy at 6.30 on the morning of the 6th inst., the dirigible "Clement Bayard III" made her way back to La Motte Breuil, making the journey in an hour and a-half, and carrying 18 persons on board.

Airships in Westphalia.

DESPITE the treacherous weather on the 2nd inst., the Zeppelin cruiser "Victoria Louise" made a trip from Dusseldorf to Rott hausen and Essen, while the Parseval airship "Charlotte" sailed from Herten to Munster, and landed at Wanne.

"Zeppelin III" Over North Sea.

THE new Zeppelin airship "Z. III" on the 5th inst., went from Hamburg to the Naval Station at Wilhelmshaven, covering the distance of about 80 miles in two-and-a-quarter hours with a crew of fifteen on board. It had been intended to make a long cruise over the North Sea, but stormy weather prevented this and the dirigible returned to Hamburg. On Saturday she cruised from Hamburg to Frankfort, starting at 12.45 a.m. and docking at Frankfort at 3.10 a.m. On Sunday morning the remaining 300 kilometres to Friedrichshafen were covered, Frankfort being left at 4.15 a.m., while the Zeppelin works at Lake Constance were reached at 10 o'clock.

A Long Voyage by "Parseval III."

LEAVING Tegel at 10.22 p.m. last Saturday night, the dirigible "Parseval III" made a cruise of 14 hours 15 mins. duration, landing at Koenigsburg at 1.15 on Sunday afternoon, a distance of 700 kilometres having been covered by that time.

Royal Passengers on the "Schwaben."

AMONGST the passengers who enjoyed a two-hours' cruise on the "Schwaben" on Monday last, from Baden Baden were the Queen of Sweden and a Siamese Prince. As the airship passed over the Palace the Queen threw down a bunch of roses as a greeting to her mother the Grand Duchess of Baden who is in residence there.

FOREIGN AVIATION NEWS.

French Navy Testing Hydro-Aeroplanes.

AT St. Raphael on Monday, Colliex on the French Navy Voisin hydro-aeroplane, rose from the sea, and after flying for three hours alighted on the aeroplane mother ship, *Foudre*. He had as passenger, Naval Lieut. Charvet. He afterwards carried out three official tests. In the first, he was up for 22 minutes at a height of 180 metres; in the second, a speed test, he was timed to do 70 k.p.h. for 55 minutes, while in the last he made several starts from the surface of the sea.

German Officer over French Frontier.

ON Monday, Lieut. Braun started from Metz, and flew over the frontier for half an hour, landing at the Frescaty Aerodrome.

Vedrines' Appeal Fails.

THE petition of Vedrines to unseat his opponent, M. Bonnail, in the recent election at Limoux has failed, the committee deciding that M. Bonnail's election was quite in order.

A Caudron 'Bus.

WITH five passengers including a lady, besides himself, Allen on a six-seated Caudron biplane built for the Ae.C.F. Grand Prix flew from Crototy to Paris-Plage and back, the party stopping at Paris-Plage for lunch. A distance of 40 kiloms. was covered in 25 minutes.

Henry Farman Tests Hydro-biplane for British Navy.

OVER the "Trou Sale," at Buc, Henry Farman, on Monday, was testing the hydro-biplane built to the order of the British Government. It rose from the water easily, and after a long trial over the country, alighted on the water and pulled up in a distance of ten metres. Henry Farman was also testing the machine built for the Ae.C.F. Grand Prix.

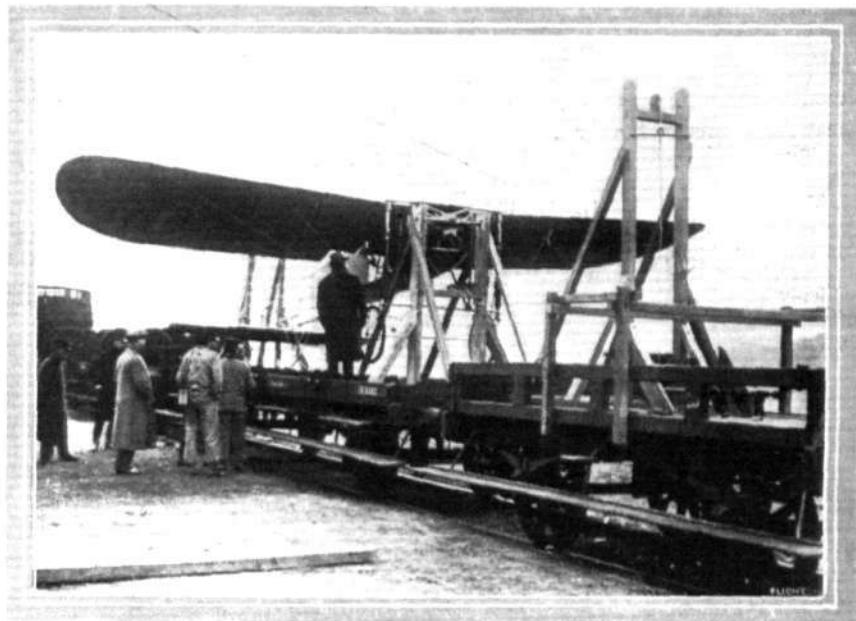
Testing New R.E.P. Machines.

ON Monday, at Buc, Amerigo was testing a new three-seated R.E.P. monoplane, built for the Ae.C.F. Grand Prix. It is fitted with a 100-h.p. R.E.P. motor, and with its full complement of passengers attained a speed of 110 kilometres per hour. Granel was testing a "Circuit European" type machine, on which several modifications have been made, and was up for an hour and a-half. Lieut. Precardin also made an hour's flight.

A.C.F. Hydro-Aeroplane Competition.

THE hydro-aeroplane competition, which is being organised for the middle of August by the Automobile Club of France is to take place in the Bay of St. Malo, the course for the speed trials being to

Jersey and back. The awards will be based on speed, and bonuses will be given according to the number of passengers carried. The start and finish will take place on the water. It is expected that the prize list will amount to at least 38,000 francs. Entries close on July 17th, and at least six entries must be received to ensure the competition being held. The maximum number of entrants has been fixed at 25.



The Blériot under test, seen from in front.

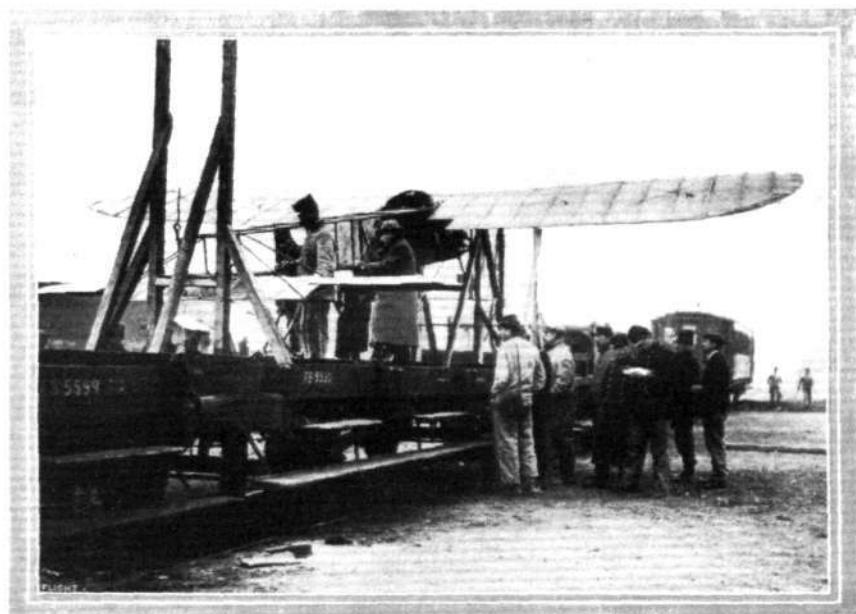
Tests With Poulain Monoplane.

ON his all-metal monoplane, Poulain, accompanied by his mechanic, flew from Juvisy to Buc on Monday in ten minutes, and after spending about half an hour with his friend Amerigo at the R.E.P. school, returned to Juvisy.

Resistance Tests with Blériot Machines.

IN our last issue we briefly referred to some tests made by the French Military authorities with a view to ascertaining the strength required for various aeroplane parts, and in this issue we are able to give a couple of photographs illustrating the method of carrying out the tests. A special train was fitted up by the Compagnie du Nord, and on this a Blériot monoplane was mounted in such a manner that while the train was in motion the machine could take all possible positions which are taken in ordinary flight.

By this method no risk of accident to the pilot was entailed. With Capt. Charet and Lieut. Maillot alternately taking the pilot's seat, the monoplane was made to assume the different positions of ascent, descent, and warping as quickly and roughly as it could possibly be done in an endeavour to realise the very worst conditions under which the machine might have to fight its way through a gale. During these tests, which were carried out during the early morning of three days, the train was driven at a speed of 72 miles (115 kiloms.) an hour over a five kilom. stretch of railway in the vicinity of Survilliers, near Chantilly. It will be observed that the speed of 72 miles (115 kiloms.) is 12 miles in excess of the calculated speed of the aeroplane, and of course the pressure increases very considerably under such conditions. The tests were carried out under the supervision of Lieut.-Col. Estienne, of the Technical Department of the Vincennes Military Aviation Establishment, and they were witnessed by Col. Hirschauer, Permanent Inspector of Military Aeronautics, Col. Bouttieaux, Director of Military Aeronautics at Chalais Meudon and many other military officers and aviators. All parts of the Blériot machine stood the test perfectly, as was afterwards testified by the military officers present.



The Blériot under test, on the railway.

A Breguet for Sweden.

ON the 5th inst., at La Brayelle, Capt. Hamilton, of the Swedish army, witnessed the official tests carried out on the Breguet biplane built for the Swedish Government. Fitted with a 80-h.p. 7-cylinder Salmon-Canton-Unne motor it rose 450 metres in 7 mins. with a load of 300 kilogs., while the speed averaged 107 k.p.h.

Testing a New Hanriot.

BIELOVUCIE, on the 7th inst., was testing at Rheims the new 80-h.p. three-seater Hanriot built for the Ae.C.F. Grand Prix. With a pilot weighing 70 kilogs. and a load of 170 kilogs., including oil and petrol for two hours, the machine climbed 360 metres in 4 mins. 30 secs.

Maurice Farman Up for an Hour.

ACCOMPANIED by M. Dumas, Maurice Farman on the 8th inst. was testing a biplane, and was flying for an hour over Buc, Versailles, the Chevreuse valley, &c.

Fatal Accidents at Rheims.

THE week-end saw three lives lost at the Betheny aerodrome at Rheims. On Saturday evening Dubreuil was flying with M. Vasseur, a Belgian pilot, when the machine fell from a height of 50 metres. M. Vasseur was killed, but Dubreuil was not seriously injured. On the following evening Kimmerling was up with an engineer, Tonnet, and when at a height of 300 metres the monoplane suddenly dived to the ground and both pilot and passenger were instantly killed.

Vedrines Flying Again.

ON Sunday, at Etampes, Jules Vedrines made his first flight since his accident, being up for half an hour on a 150-h.p. Deperdussin. He was flying with all his old-time assurance, albeit there was evidence that he has not yet fully recovered, as his head was swathed in bandages.

The Farman Grand Prix 'Bus.

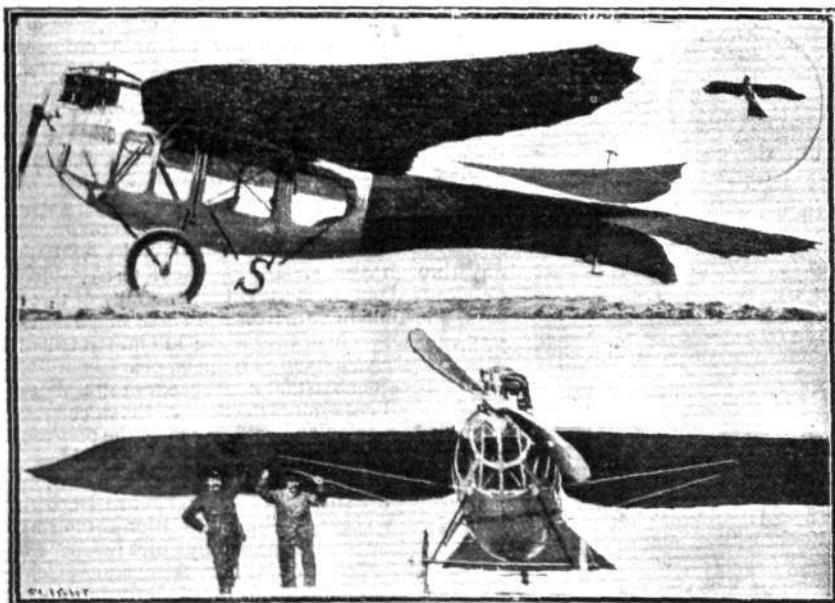
AFTER testing the hydro-aeroplane ordered for the British Navy at Buc, Henry Farman on the 7th inst. put the biplane which he has built for the Ae.C.F. Grand Prix through its paces. It carried five persons on board, including Henry, Maurice and Dick Farman, De Ram and Bourcier.

A Maurice Farman for Italy.

AT Buc on the 7th inst., Bernard was testing a Maurice Farman biplane ordered by the Italian Government. With Capt. Prandoni as passenger the machine climbed 2,000 metres in 25 minutes and continued flying for four hours, finally landing by a very fine *vol plane*.

The Michelin Target Prizes.

FOR the third series of trials by the Michelin Aero Cible prizes, which took place at Mourmelon on Sunday last, there was only one competitor, Lieut. Mailfert, on a 100-h.p. Gnome-Farman biplane, he had as passenger Capt. Conade. Both in the morning and evening trials he landed seven out of fifteen projectiles on the target.



The Etrich 1912 military monoplane, from the side and front. Inset the machine is seen in flight. One of the Etrich machines has just been acquired by the British Government.

The Next Paris Flight Salon.

OCTOBER 26th to November 10th has been fixed upon as the period during which the forthcoming exhibition of aeroplanes, &c., will be held in the Grand Palais, Paris.

A New Swiss Prize.

THE Swiss Aero Club is offering a prize of 1,200 francs for a competition among Swiss aviators from Zurich to Lucerne without landing.

Norway and Switzerland to have National Funds.

FOLLOWING the lead of other European nations, Norway is to have a National Subscription for the purpose of creating an aerial military fleet. A project is also under way for the starting of such a fund in Switzerland.

A Norwegian Naval Aviator.

LIEUT. DONS of the Norwegian Navy, on Sunday week, started from the Naval Station, at Horten, and cruised along the Christiania Fjord to Moss and Frederikstad where he landed at the Military Camp, a distance of 60 kilometres being covered in 35 minutes.

Two Turkish R.E.P. Pilots.

Two Turkish officers Capt. Refik and Lieut. Nouri, who have been studying aviation at the R.E.P. school at Buc, have now qualified for their certificates.

More Machines for the Russian Army.

IT is reported from St. Petersburg that the Russian military authorities have decided to purchase 150 Nieuport monoplanes and eight Farman biplanes. Only ten are to be purchased abroad, the remainder to be built in a factory which is being started at Moscow, where it is stated the Gnome engines will also be built.

An American Colonel Qualifies.

CLAIMED as the first American militia officer to qualify for the U.S. Army pilot's certificate, Lieut.-Col. C. B. Winder, of the Ohio National Guard, made the required tests on a Curtiss biplane at College Park on May 22nd. Unfortunately, almost immediately afterwards he was taken ill with fever which had been developing prior to the tests.

Flying over Lake Michigan.

WITH a load of silk and about 7,500 circulars, the latter being dropped over the city, Farnum T. Fish, an 18 year old pilot, flew on May 25th across Lake Michigan from Chicago to Milwaukee. The trip, between 90 and 100 miles, was accomplished on a Wright biplane in 2 hours 6 mins.

Another American Lady Pilot.

ON May 19th at the Curtiss School at San Diego, Cal., Miss Julia Clark of Chicago qualified for a pilot's certificate. She made the tests in a 15-mile wind and at an average altitude of 800 ft.

Doctor Flies to His Patient.

ACCORDING to a cable from New York, Dr. Alden, of Hammondsport, was summoned to an accident ten miles away the other day, and started off in his motor. A wheel gave way, but in an adjoining field was an aviator—how does this sort of thing happen?—who at once offered to take the doctor to his destination. This was safely accomplished; but, after the doctor had operated on his patient, he preferred walking back, as, so it is said, he got air-sickness on the aeroplane.

U.S. Army Testing an Aeroplane Gun.

FOR some time the United States Army have been working at the problem of a quick-firing gun for use on an aeroplane, and some experiments carried out with such a weapon at Washington on Saturday last are said to have been very satisfactory. The tests were witnessed by Brigadier-General Allen, Chief of the United States Signal Corps, which deals with all matters aeronautic. The gun was mounted on a biplane, which was at a height of 300 ft. during the tests. It is possible to fire 500 shots a minute.

The Peugeot Prizes for Aviettes.

IT has been decided to hold the second trials for the Peugeot prizes at the beginning of October. The entry list will not be re-opened, but entrants may transfer their number to a new competitor.

STRUTS.

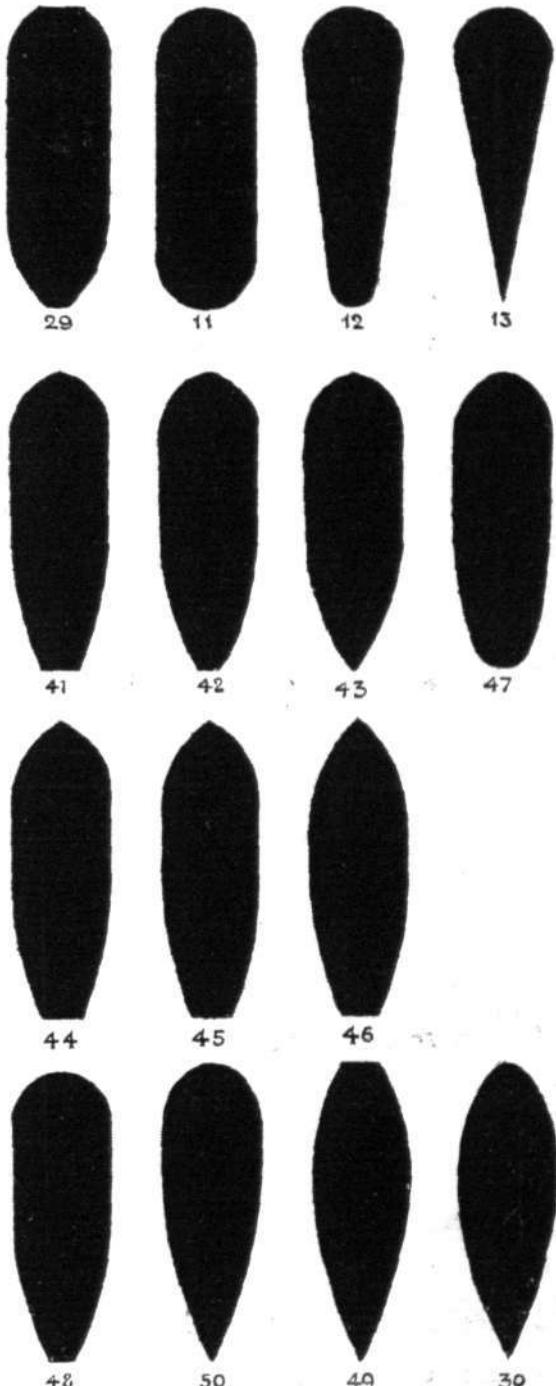
Notes and data relating to a series of tests on the Resistance of Aeroplane Struts made for Mr. Alec Ogilvie and presented by him to the Aeronautical Society of Great Britain.

THE struts were tested for resistance at the National Physical Laboratory, in a 4 ft. wind tunnel at a speed of about 20 m.p.h. Every strut was 3 ft. in length and 1 in. wide across the stream. The depth in the direction of motion varied, as also did the shape of the section, but reference to the accompanying diagrams will show that the struts tested formed series of definite ratios of depth to width. Also, it will be noticed that the sections themselves

facilitate easy reference. The column headed $\frac{I}{R}$ is the inertia of the strut section compared with the inertia of the rectangular section No. 25, which is taken as the standard and has been given the value 1,000; it gives a value for the strength of the strut. The column R is the total resistance in lbs. for 100 ft. of strut at 40 miles an hour. Column W is the weight in lbs. of 100 ft. of strut on the basis of 30 lbs. per cubic foot for spruce.

N ^o	I	R	W	$\frac{I}{R}$	$\frac{I}{W}$	$\frac{I}{6R+W}$	F ₄₀
29	1240	11.4	57.3	109.0	21.6	9.92	75
11	1315	17.0	58.5	17.4	22.5	8.22	62
12	721	17.0	45.8	42.5	15.7	4.88	37
13	445	28.0	33.4	15.9	13.3	2.21	17
41	1079	6.3	53.4	171.0	20.2	11.85	90
42	1041	6.7	52.0	155.0	20.0	11.34	86
43	1001	7.3	50.0	137.1	20.0	10.65	81
47	1064	7.3	52.9	146.0	20.2	10.96	83
44	1055	6.7	52.8	157.5	20.0	11.35	86
45	1028	6.3	51.9	163.0	19.8	11.43	87
46	953	8.7	49.8	110.0	19.1	9.35	71
48	1012	7.3	50.6	139	20.0	10.65	81
50	877	6.0	47.0	146	18.6	10.55	80
49	764	7.6	44.8	100.0	17.0	7.57	57
30	768	8.3	44.1	92.5	17.4	8.17	62

3 to 1 series



sometimes form smaller series having similar characteristics at one point or another, such as, for example, a semicircular entry or a pointed tail.

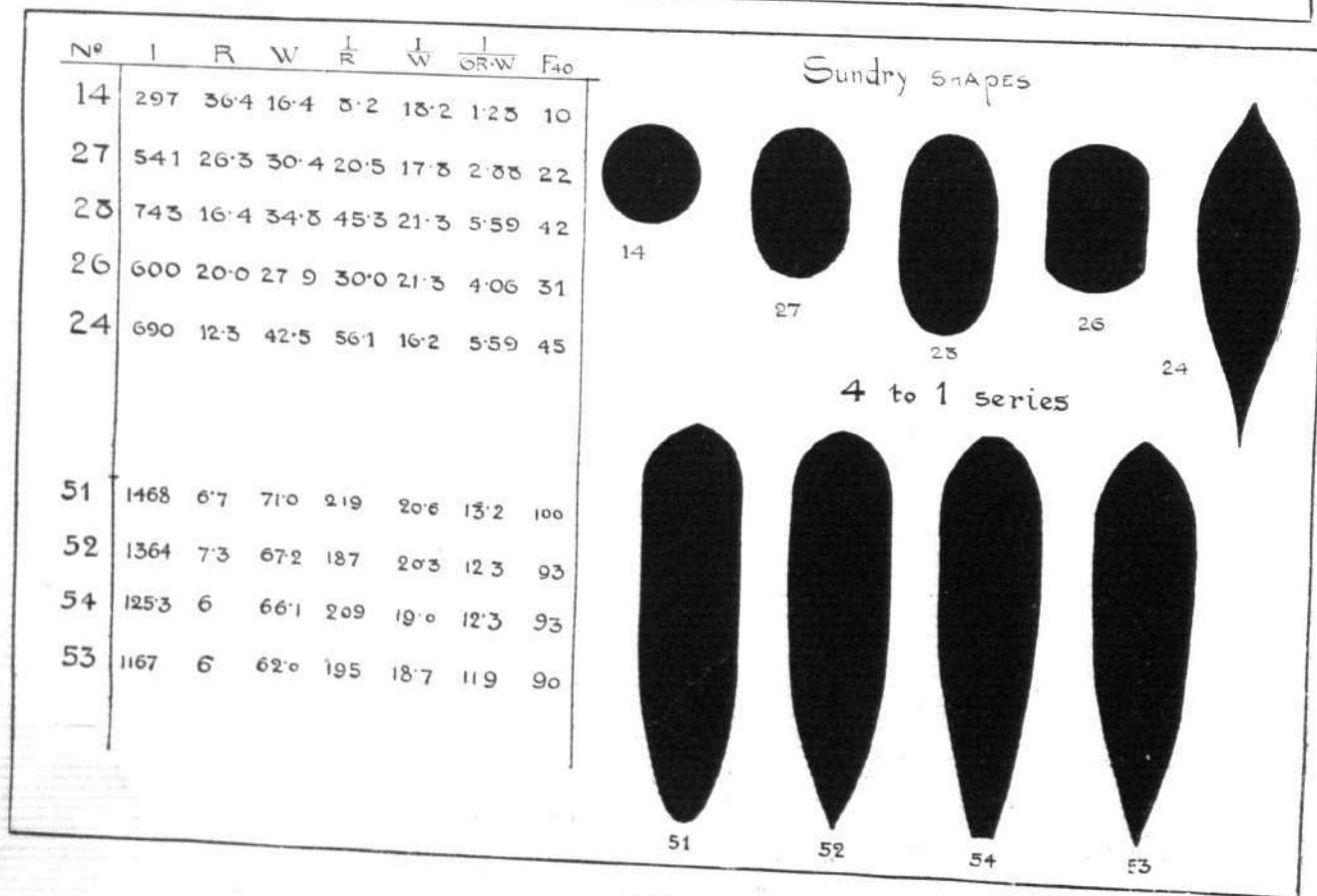
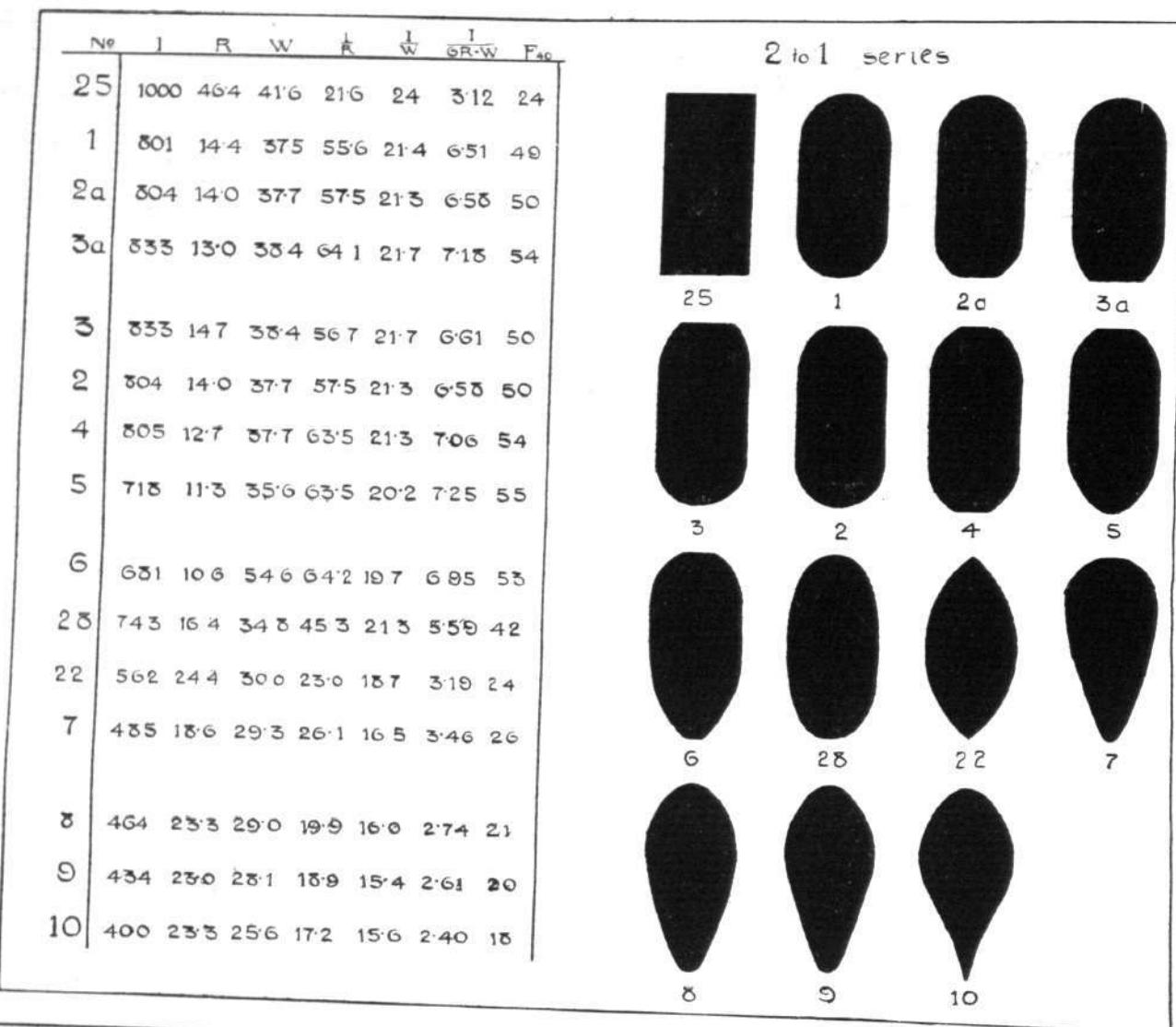
Every strut was most accurately made and the section of every point in its length tested by a brass gauge. The struts were made of silver spruce and were sandpapered to a uniform degree of smoothness.

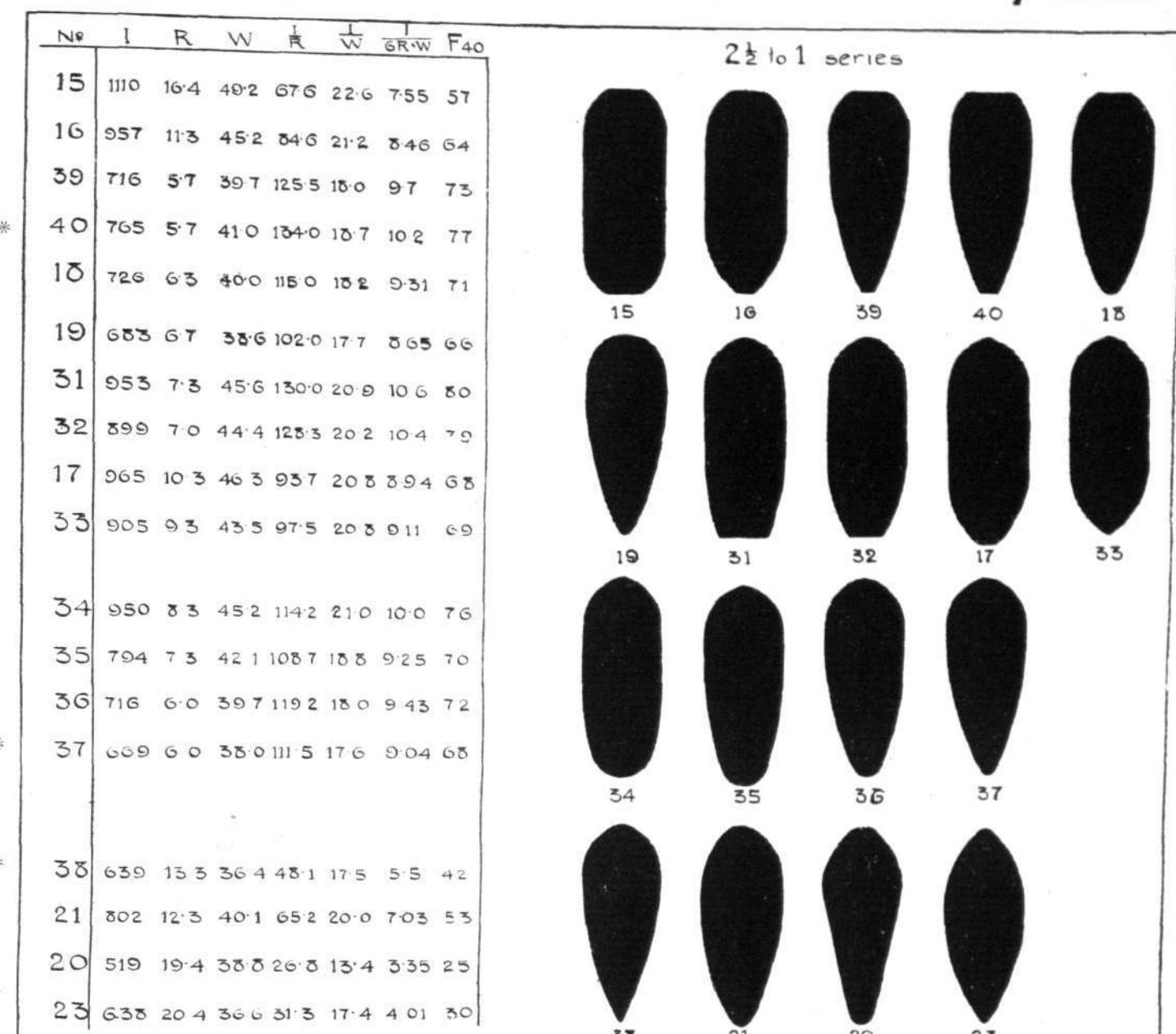
The information contained in the diagrams includes the sections of the struts tested, on a reduced scale, and a table of eight columns, the abbreviated headings of which are explained as follows:

The first column is the number of the strut section and the arrangement of the tables in relationship to the sections is such as to

Column $\frac{I}{R}$ is the ratio of strength to resistance, while column $\frac{I}{W}$

is the relation of strength to weight. Column $\frac{I}{6R+W}$ is the relationship of strength to resistance and weight, the factor 6 being introduced in order to express resistance in terms of its equivalent weight on the assumption that the gliding angle of the machine is 1 in 6; which means to say that every pound of head resistance is the equivalent of six pounds dead weight.





In all the diagrams, the symbols above each column of the table are as follows:—

I = inertia of section, *i.e.*, the factor representing the strength of the strut as compared with No. 25, which has a rectangular section.

R = resistance in lbs. per 100 ft. at 40 m.p.h.

W = weight in lbs. per 100 ft. at 30 lbs. per cu. ft.

T = ratio of strength to resistance.

$\frac{1}{R} + \frac{W}{W}$ = ratio of strength to resistance and weight on a basis of a gliding angle of 1 in 6.

F₄₀ = the above, reduced to a percentage of the highest value, *i.e.*, for strut No. 51.

The final column F₄₀ is the same as the preceding column except that the result has here been divided by 132 or $\frac{1}{100}$ th of the result for No. 51 strut. This facilitates comparison by expressing the results as percentages of the highest value obtained, which is for strut No. 51.

In calculating the inertia, the cross section of each strut was traced through its gauge on to squared paper and the areas of the laminae at different distances from the major axis were thereby calculated. The area of each lamina, or row of squares, was multiplied by the square of its distance from the major axis and the sum of these results was multiplied by a constant in order to give the moment of inertia of the section as compared with that of the rectangular strut No. 25: for details of calculation see example.

In connection with the column giving the relation of strength to resistance and weight, if this is to be used for higher speeds, the constant must, of course, be modified. For example, the resistance at 80 m.p.h. would be quadrupled and the factor 6 thereby changed for the factor 24, or thereabouts.

The resistance of any shape at 40 m.p.h. in lbs. per sq. ft. of maximum cross section can be obtained by multiplying column, R, by the constant '12. For 60 m.p.h. the constant is '27.

* The tests on these struts were the mean of two independent experiments.

Many practical conclusions can be drawn from these tests.

It is evident that the radius of curvature of the run must be five or six times as great as the curvature of the entry. Cutting a piece off the bow or the stern so as to leave a flat does not seem to be very important; in fact, strut No. 31 has a lower resistance than strut No. 34 and the same resistance as strut No. 43. Struts Nos. 39 and 40 have the lowest resistance of all, and strut No. 40 is particularly interesting.

If the run is closed in too quickly there is a fairly well-defined point at which the air no longer clings to the surface, but breaks away and forms a source of increased resistance. For example, in the series Nos. 34 to 38, strut No. 38 represents the point in question.

In the 3 to 1 and 4 to 1 series much better shapes than those given can be found.

The writer desires to acknowledge the great assistance rendered by Mr. V. Le Cren in preparing this report.

ALEC OGILVIE.

Notes on special sections.—No. 26. Section of chain tube used on Wright biplane. 24. Streamline shape, page 14. Lanchester Aerodynamics. 25. Rectangle standard for strength. 1. English Wright strut. 4. American ditto. 22. Farman strut. 23. Blériot strut.

STRUTS.—Example showing how weight and the moment of inertia of each strut was calculated.

Mean sum of squares in rows, A and A¹ = 17.4
 " " B and B¹ = 23.6
 " " C and C¹ = 28
 " " D and D¹ = 29.6
 " " E and E¹ = 29.9
 Total 128.5

Or the whole area of figure = $\frac{128.5 \times 2}{100} = 2.57$ sq. inches.

The weight of 100 ft.-run of strut is its sectional area in sq. inches.

$$A, \times \frac{100 \times 12 \times 30}{1728} \text{ lbs.}$$

(30 lbs. being the assumed weight of 1 cubic foot of spruce),
 = area $\times 20.83$ (constant).
 ∴ in this case the weight of 100 ft.-run = 2.57×20.83 ,
 = 53.4 lbs. weight.

Again, from above, $17.4 \times (9)^2 = 1408.5$
 $23.6 \times (7)^2 = 1157$
 $28.0 \times (5)^2 = 700$
 $29.6 \times (3)^2 = 266.5$
 $29.9 \times 1 = 29.9$

Total 3569.1



(N.B.—In above, the factor 9 is the distance of row A from the major axis, &c.)

The total represents the moment of inertia of the figure about its major axis. But the corresponding moment of inertia of No. 25 strut in the same units is 3,300.

Reducing this to 1,000 units, the corresponding moment of inertia of No. 41 becomes $\frac{1000}{3300} \times 3561.9$,

or $303 \times 3561.9 = 1079$ (approx.) ('303 being, therefore, the constant referred to in the notes.)

Certain figures in the above calculations, likewise some of the notes in the text, differ slightly from the manuscript as originally presented, the author having revised the proofs of this article before its appearance in FLIGHT.—ED.



THE AERO ENGINE.

By G. H. CHALLENGER.

(Continued from page 523.)

Pump Charging.—We have seen that the piston suction cannot induce a full charge, because the velocity of the mixture through the carburettor, induction pipes and valves is proportional to the square root of the difference in pressure so that although larger valves and pipes will ensure a better result, we cannot hope to obtain a full charge at high piston speeds without some outside aid. Various experiments have been made on automobiles with pumps and centrifugal fans to augment the charge, but the extra complications do not appear to have been justified by the results obtained, but this need not deter the designer of aero engines, because except for track-racing automobiles the desire of automobile engine designers is to increase the power developed at low piston speeds, whereas the effect of forced feed will fall off rapidly with decrease in piston speed, as will be seen by a little consideration of Table V.

The aero engine designer requires high piston speed to keep down the weight for power developed, and forced feed will help him to keep down weight still more. A cylinder already considered had a bore and stroke of 100×160 ; with a revolution speed of 1,200 r.p.m., it required mixture at the average rate of 1.78 cubic ft. per second during one stroke in every four.

Radial Engines.—A radial engine made up of five such cylinders equally spaced round a single throw crank-shaft may be arranged to fire in the following order, 1, 3, 5, 2, 4, 1, 3 and so on. There will be a slight overlap in the cylinders' demand for mixture due to five cylinders requiring mixture during two revolutions. The rate of total supply demanded will be therefore $1\frac{1}{2}$ times 1.78 or 2.22 cubic ft. per sec. if all the cylinders have the volume swept by the piston, filled at atmospheric pressure. A simple means of assuring this supply without extra moving parts is available on the aeroplane. If the aeroplane's speed is 60 miles per hour or 88 ft. per sec., then, neglecting various losses if the air intake to the carburettor faces the direction of flight, and has an area of 0.025 sq. ft. or a diameter of slightly more than 2 ins., air will be forced in at the rate of 2.22 cubic ft. per second.

Pipe Friction.—Actually this rate of flow with an intake area of 0.025 sq. ft. would be diminished, due to the resistance encountered in varying the velocity of the air to maintain the rate of flow through the various restricted areas of the carburettor choke inlet valves and friction in pipes and bends, but if the area of the intake is increased, the resistance offered by the surplus air to being set in motion will be converted into static pressure, which can be utilised to force the necessary air through the pipes. If required, the area of intake may be made greater than 0.025 sq. ft. plus the amount required to overcome resistance, in which case the surplus area will be utilized in charging the cylinders at a pressure greater than that of the atmosphere—the increased pressure depending on the amount of surplus area.

The compression and explosion strokes are so ultimately connected that they must be considered together.

M.E.P.—The thermal efficiency and the mean effective pressure during the explosion stroke increase with increase of compression before ignition for a given rate of fuel consumption. It has been

found that the pressures produced with any given mixture are proportional to the pressure before ignition, i.e., doubling the pressure of the mixture and maintaining its temperature constant before explosion doubles the explosion pressure.

Comparing engine tests 9 and 11 in Table III it will be seen that a compression ratio of 3.92 gave a compression pressure of 68 lbs. per sq. in. and a mean effective pressure during the explosion stroke of 83 lbs. The maximum pressure attained by the explosion was probably 250 lbs. A compression ratio of 4.71 gave a compression ratio of 86 lbs and a mean effective pressure of 85 lbs. only 2 lbs. per sq. in. more than the previous case, whilst the maximum explosion pressure probably reached 315 lbs.

Pressure and Strength.—As the strength of parts must be proportioned to stand the maximum pressures, it is doubtful if the $2\frac{1}{2}$ per cent. increase in power and lower fuel consumption of the higher compression engine are worth having for the 25 per cent. increase in strength necessary to withstand the higher explosion pressures. The maximum temperatures are proportional to the maximum pressures so that the desirability of limiting the compression pressure, on air-cooled motors, in order to lessen the heating of cylinder walls is apparent.

In stationary engines, where weight is not of serious importance, full advantage can be taken of the economy obtained by high compression. Test 12, Table III, has been inserted to show the high thermal efficiency obtained with a compression pressure of 500 lbs. Tests 9, 10 and 11 also show the increase of thermal efficiency with increase of compression pressure.

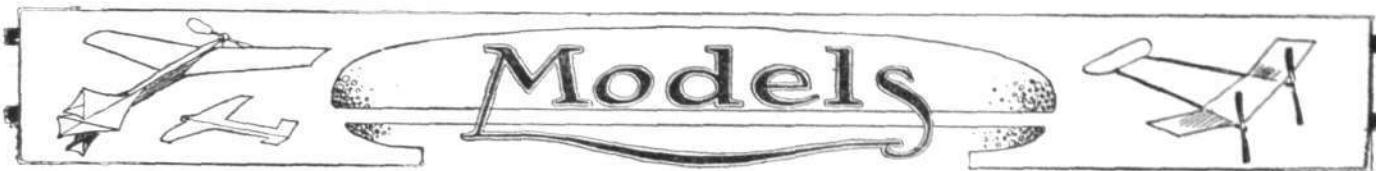
Compression Ratios.—We have seen by Table IV that the low compression ratio engine suffers badly from attenuation of the charge at high piston speeds as compared with the high compression ratio engine. The forced feed system already mentioned would wipe out the loss of power in the low compression engine to a great extent, and might even result in a greater massic power, i.e., horse power per pound weight of engine.

Table VI has been calculated with the same limiting conditions as Table IV.

TABLE VI.

Unit volumes supplied with forced feed at atmospheric pressure...	A.	B.
Volumes of mixture and residue exhaust in cylinder at end of stroke ...	3	$2\frac{1}{2}$
Percentage of residue exhaust per unit volume ...	4	4
Power developed with forced feed, taking that of compression ratio of 4 as unity ...	25 p.c.	33 $\frac{1}{3}$ p.c.
Ditto without forced feed ...	1	0.88
Relative weight of motors ...	1	0.41
Ratio of power to weight with forced feed, taking 4 ratio as unity ...	1	0.75
Ratio of power to weight without forced feed ...	1	1.175
		0.55

(To be concluded.)



Conducted by V. E. JOHNSON, M.A.

The K. and M.A.A. Competitions for 1912.

THE Kite and Model Aeroplane Association's programme of competitions for the coming season is at last published, and copies can be secured from the secretary (Mr. W. H. Akehurst) for the small sum of one penny, exclusive of postage. Everyone who takes even the smallest interest in aviation (model or otherwise) should not fail to secure a copy. It is very certain that no other Association (of a similar character) in the world can produce such a programme, numbering all told some dozen and a-half events, *exclusive* of official trials for the registration of model performances. The mere number of the competitions—which in itself might mean little or much—is not, however, the chief item in the programme, but their variety, including as it does: Duration Contests for hand-launched models, judged, as such should be, on an Efficiency Test; Junior Competitions, for models made by the competitors; Competitions for Models rising from the ground under their own power; a Steering Competition for self-launching models, an Altitude Contest, Kite

both to be held at the Welsh Harp, Hendon: the first for models weighing not less than 8 ozs., on August 10th; and the second for models, minimum weight 4 ozs., on August 31st. The tests in both cases are the same, viz.: (a) rising off the water; (b) duration of flight; (c) landing on the water after a free flight (*i.e.* not a glide only). Maximum marks: 75 for duration, 25 for alighting on the water. Should it so happen that some of the models alight at the end of their flight on the land and not on the water, then additional (short) flights may be made in order that test (c) may be satisfactorily carried out.

The Duration and Stability Competition for Single Tractor Screw Models is another contest possessing special interest—the models in this case having to rise from the ground under their own power. The date of this competition is September 28th. Maximum marks 100—60 for duration, 40 for stability. Minimum weight 6 ozs.

The competitions should certainly do much to encourage the development of the self-launching model, and of a type of flyer



Mr. W. P. Dean and his Twining-type model.

Some of the prizes given by the Kite and Model Aeroplane Association for competition last year.

Flying competition; An International Model Contest; An Ornithopter competition; A competition for Power-Driven Models; A Scout's Longest Flight Competition; Hydro-Aeroplane Contests; Longest Flight Competitions; A Longest Flight and Stability Contest; A Duration and Stability Competition for Single Tractor Screw Models, &c.

Amongst the above, eight (including the hydro-aeroplane competitions) are for self-rising models, and in one other competition, the longest flight and stability competition, 50 additional marks are awarded for models starting solely under their own power off the ground. The age for the junior competitions (of which there are four) is 16 and under. In the past the "Juniors" have done extremely well in many of the "Senior" competitions and it is quite likely that the same thing will happen again this year. Competitors should carefully note the minimum weight permissible in the various competitions before commencing their experiments, as in several cases it has been raised from 4 ozs. to 6 ozs. and even 8 ozs., which means that various constructional details may very possibly require careful modification and re-adjustment. They should also note that no less than eight of the competitions will be held on the National Aviation Ground, Harrow, Northolt Junction. Amongst the newer type of contests the steering competition for models rising off the ground is undoubtedly one that offers considerable scope for original experiment and mechanical ingenuity, the following are the tests: (a) straight flight ahead; (b) circular flight to the right; (c) circular flight to the left. To qualify for test *a* models must fly straight for not less than 50 yards, for tests *b* and *c* one complete circle, at least, must be made. These tests mean that the model must show good stability; both in rising, circling, and gliding. The minimum weight is 6 ozs. The two model hydro-aeroplane competitions are

which can be really called (with some degree of consistency) a *model*—as opposed to a flying-stick—which in our opinion, however interesting from the sporting side of the question, is now doing absolutely nothing to advance the science of aviation, and which ought to be relegated to juvenile contests only. So obsessed are many aeromodellers with the idea of mere distance that even when they have designed and constructed a successful self-launching model, they nine times out of ten launch it by hand in order to gain a few extra yards. Surely this is the very essence of weakness.

In nearly all the above competitions it is expressly stated that: competitors may submit models of any kind, *i.e.*, that power-driven models are eligible as well as rubber-driven ones. The real deciding factor in this will be the nature of the ground on which the competitions will be held. We have not yet, personally, seen the Harrow Aerodrome, a flying ground of 256 acres, with a straight run of 1,500 yards and a circuit of over two miles—the plan of the ground is nearly a square, one corner and part side somewhat rounded off—but should this prove suitable then it is highly probable that some power-driven models will compete. Unless, however, the ground is in every respect suitable, we are quite convinced that such will not be the case. No sensible person would enter a model, which, if any good, is at any rate worth from £15 to £20, in a competition in which it stood a very fair chance of being smashed up.

The question of power-driven models naturally brings us to the "Grahame-White" power-driven duration competition at the Hendon Aerodrome on July 25th. This contest is limited to models rising off the ground under their own power, the motor used must be either steam, petrol, or carbonic acid gas. Competitors

must state fully the weight of the machine with engine, and also the h.p. of the engine. The committee reserve the right to refuse any entry [obviously models above a certain size and weight would be dangerous and could not be permitted—the limit should be stated as soon as possible]. Amongst the rules it is expressly stated that all competitors must note that models must be tuned up to remain on the ground, i.e., to land within the aerodrome. Naturally every competitor would for his own sake and the sake of the model set it to circle. In the case of a wind there is of course the question of drift to be considered, and it is one which cannot be counteracted by any means that we know of. This means that the competition must be flown in calm air.

The prizes are a silver trophy, presented by Mr. Claude Grahame-White; and second and third prizes of a silver and bronze medal respectively. The latter presented by the K. and M.A.A. To the last two prizes we must respectfully take some exception. Either these should be altered or omitted altogether, placing as they do a valuable power-driven model in the same category as a rubber-driven one costing a few shillings.

The competition is one of the very greatest interest, and it is most earnestly to be hoped that no effort (even if of a special character) will be spared to make it a success. On the same day are to be held the Wakefield Competition, and also one for Scouts; the triple event should prove an especial attraction to the London Aerodrome for the day being—namely, July 25th.

English and American Flyers.

We have received a copy of a communication sent by Mr. Robert P. Grimmer to the secretary of the New York Model Aero Club, concerning the statements made by the latter with respect to the Mann monoplane competing in some of the American contests (FLIGHT, May 18th). In his letter, Mr. Grimmer states:—“In an event of this kind it would be inadvisable for us to arrange for an agent to compete, for your American models would be piloted by their designers, and it would penalise us greatly if Mr. Mann were unable to pilot his own machine. In short, if your club will guarantee us



THE KITE AND MODEL AEROPLANE ASSOCIATION.

OFFICIAL NOTICES.

Trials.—The official trials for model performances take place to-day, Saturday 15th, on the 100-acre field, Greenford. Members should travel to Perivale Halt Station, District Railway, changing at Ealing Common.

Junior Competition.—Entries for this competition close to-day, Saturday, June 15th, and it is hoped that many of the juniors will enter for the cash prizes which will help them on in their experiments.

Competitions.—On Saturday, June 8th, the second annual contest for the *Model Engineer* Challenge Cup took place on the Aviation Ground, Northolt Junction. On account of the *Daily Mail* Gold Cup contest, several of the judges were officiating at Hendon.

our expenses and some share of the gate money, we shall be delighted to meet your American aeromodellists on your own ground in New York.”

We have also received a letter from Mr. William P. Dean, formerly of the Manchester Aero Club Model Section, and now settled 160 miles from New York—9, So. Church Street, Schenectady, N.Y., U.S.A.—in which he states that he will be pleased to represent and fly any sample models of the chief English prize winners at one of the contests which are held every Sunday afternoon at Van Cortlandt Park, New York, in connection with the New York Model Club. Mr. Dean gives Mr. H. V. Roe as one of his references, and states that he was a prize winner in 1910 in both Manchester and Oldham competitions. He awaits further enquiries and invites correspondence.

In a personal reply which we recently forwarded to the secretary of the New York Model Aero Club, in connection with their statement in May 18th issue, we made this club the following sporting offer, viz.—that if they like to send a replica of one of their best models over here, we would fly it personally in some of the K. and M.A.A.’s competitions—forwarding to America, i.e., to the maker and designer of the machine, anything in the way of prizes, medals, &c., that it might win. At present we are awaiting their reply.

Mr. Walter Bomberger, 6,730, Ridge Boulevard, Brooklyn, U.S.A., desires full particulars *re* the Trykle model, also catalogues from some of the leading English model firms.

O. HAMILTON, Junr.—We do not quite understand your query *re* fins, i.e., exactly what information you require. Generally speaking, however, when correctly placed their area is quite small, but much depends of course on the purpose for which they are used, if for directional control only, their area is much less than if used say for producing lateral stability in a single propeller model, when they may with advantage be of quite a fair size. In the case of tractor screw models, a less fin appears to produce the same result, it certainly does so when twin propellers are used, your best way is to try a number of experiments and send along the results, it is a subject badly needing plenty of further investigation.



A. F. Houlberg, official duration record holder, and his model.

Mr. Houlberg made the best duration, but being judged on the efficiency test, Mr. C. R. Ridley was placed first with 224 marks who, therefore, holds the handsome trophy for the year and winner of the *Model Engineer* silver medal which accompanies the cup.

The Association silver medal was the second prize, being carried off by Mr. A. E. Woollard, the Hon. Sec., Blackheath Aero Club, while Mr. A. F. Houlberg gained the Association’s bronze medal as third prize.

The following table shows the best duration made out of the three trials allowed and the weight of machines, &c. Messrs. C. Davies and W. H. Akehurst officiated as judges.

Model Engineer Challenge Cup Contest. Official results. Judged on efficiency test. Duration of flight \times $\frac{\text{total weight of machine}}{\text{weight of rubber}}$.

Place.	Competitor.	Machine.	Duration.	Total weight of machine.		Marks.
				secs.	ozs.	
1	C. B. Ridley	Ridleyplane monoplane	59	4 ³ ₄	1 ¹ ₄	224
2	A. E. Woollard	Woollard monoplane	64	5	1 ¹ ₂	214
3	A. F. Houlberg	Houlberg monoplane	68	4 ¹ ₂	1 ¹ ₂	204
4	H. R. Weston	W.H.C. monoplane	60 ¹ ₂	5 ¹ ₄	1 ¹ ₂	182
5	J. McBirnie	Birmac monoplane	66	4 ¹ ₂	1 ¹ ₄	179
6	C. R. Fairey	Fairey monoplane	48	4 ⁵ ₈	1 ¹ ₂	177
7	G. Rowlands	Rowlands monoplane	59	5	1 ¹ ₂	169
8	F. Clare	Clare monoplane	56	4 ³ ₈	1 ¹ ₂	157
9	J. H. Dollittle	Gnat monoplane	45	5 ¹ ₂	2	129
10	F. W. Jannaway	Janaplane monoplane	35	5 ¹ ₂	1 ¹ ₄	105
11	R. F. Mann	Mann monoplane	39	5 ¹ ₂	2 ¹ ₂	99
12	M. Vincent-Smith	Vincent-Smith 29 mono.	30	4 ¹ ₂	1 ¹ ₂	90
13	R. C. Thomson		36	5 ¹ ₂	2 ¹ ₂	87
14	R. P. Grimmer	Mann monoplane	19	5 ¹ ₂	2 ¹ ₂	48
15	A. Lewis		17	5 ¹ ₂	2 ¹ ₂	43

There were 19 entries received; 5, however, did not turn up, the holder, Mr. E. W. Twining, being unable on account of illness.

W. H. AKEHURST, Hon. Sec.
27, Victory Road, Wimbledon.

PROGRESS OF FLIGHT ABOUT THE COUNTRY.

Model Clubs: Name of District only given. In brackets: Secretary's address.

Notes regarding Clubs must reach the Editor of FLIGHT, 44, St. Martin's Lane, London, W.C., by first post Tuesday at latest.

MODEL CLUBS.

Aero-Models Assoc. (N. Branch) (15, HIGHGATE AVENUE, N.).

Inter-club duration match v. Palmer's Green, at Finchley, to-day (Saturday) at 3 p.m. Open duration competition July 6th, Finchley, 3 p.m., for an antimony rose bowl, presented to the A.M.A. Open to members; non-members 1s. entry fee.

Birmingham Aero Club (8, FREDERICK ROAD, EDGBASTON).

CONTEST at Coventry; winner, Coventry, with average 52 secs. against Birmingham's 40½ secs. Competition times, Coventry: Shorter, 63 secs.; Rice, 48; Austin, 47. Birmingham: Wilde, 42½; Trykle, 40; King, 39. All models single propellers. This match counts as the first in Midland League being formed.

In evening at Coventry Club's workshop, fine exhibitions with tractor monoplane rising from ground were given by Mr. Rice. Other flying by A. F. McManus, M. Vale, V. L. Thompson and Mr. G. Haddon Wood.

Mr. E. Trykle and G. Mason, June 22nd, flying at Moor Green.

Blackheath Aero Club (48, HAFTON ROAD, CATFORD, S.E.).

FLYING at Grove Park week-end by Messrs. Eland, Attwoll, Bailey, and Plummer. At Blackheath by Messrs. Hunt, Dixon and Hinchcliffe (1-1-1-P₂). On Sunday, bad rain, Mr. J. H. Dollittle with Gnat 27 obtained duration of 63 secs. On July 13th at Grove Park K. and M.A.A. registration trials. Particulars from hon. sec. of the K. and M.A.A. Flying next week-end at Grove Park and Blackheath.

Brighton and District ("KINGSLEIGH," KINGSWAY, HOVE).

SEVERAL members out Saturday. Fair performances. Mrs. Wingfield has offered fine silver cup. Big Nieuport out Sunday with new chassis. Seven fine flights, four over 90 yards, one over 100, and longest 118 yards. Mr. Bate's 68-secs. flight on Whit-Monday passed as club record.

Bristol Model Flying (3, ROYAL YORK CRESCENT, CLIFTON).

MEETINGS, 4th and 8th, very successful. Best flights by Messrs. Howse (1-1-P upturned wing tips), Pearce (1-1-2-P), Martin (4-oz. rising-from-ground 1-2-2-P) and Secretary (12-oz. 1-1-2-P). Practise meeting at Zoological Gardens to-day (Saturday) 7 p.m., 32 entries for Competition G.C.C. fête. Special prize for design and construction alone.

Cardiff Aero Club (114, MISKIN STREET, CATHAYS).

MEETING in Cathays Park 5th inst. Mr. F. Crouch (twin-screw monoplane), flights up to 29 secs. New members: E. N. Gregory, T. J. Hughes, N. Jenkins, C. W. Hunt. E. N. Gregory exhibited twin-screw biplane of own construction and N. Jenkins a "1912 model Aerial" (which flies at a great speed). The club glider should be finished for July.

Coventry Aero Building Soc. (22, KINGSTON RD., EARLSDON).

CONTEST in drenching rain with Birmingham Club resulted in Coventry Club's win, as per details in Birmingham Club report. The Coventry Society and the Birmingham Society were the first clubs to arrange these inter-club contests in England.

Dundee Aero Club (Y.M.C.A., 10, CONSTITUTION ROAD).

LECTURES are to be given periodically in the club's new quarters, the first on the 20th inst. when Mr. Ian M. Luis will read a paper on model making and flying, in order to open the subject. Duration and efficiency competition on 22nd in Lochee Park at 5.30 p.m. First prize a silver medal presented by club.

Formula:—Weight of machine × time of flight.

Area of planes × weight of rubber.

Ealing and District (1, QUEEN'S GARDENS, EALING, W.).

DURING week, L. Roche beat his own club record, (48 feet) for paper gliders under 12 inches span, with bird-shaped glider, with 53 ft. 11 ins.

To-day (Saturday), K. and M.A.A. record trials at Greenford.

Hackney and District (THE HOLLIES, JENNER ROAD, N.).

CONTEST with Paddington postponed owing to weather preventing three Paddington men from attending. During the evening, following official durations were obtained: Gittus, 54 secs. (0-1-1-P₂); Dore, 50 (11-ounce model); Louch, 73 (twin-screw, "A" frame). Later, Mr. Louch, who smashed a propeller, obtained duration 65 secs., with only one propeller working. Friday, at Spensley Hall, great interest was centred round latest 0-1-1-P₂ models.

Paddington and Districts (77, SWINDERLY ROAD, WEMBLEY).

CONTEST for Paddington Cup is postponed for few weeks, Parkside being closed for hay. Entries received to end of June. Return match with Hackney Club postponed owing to wet weather.

Members' recent duration averages: C. Dutton, 46 secs.; F. Lane, 45; C. Chalfont, 42½; A. Cannel, 41; C. Levy, 39½; W. Evans, 31½; Woolley 29; T. Carter, 27; M. Levy, 26½.

Putney and Wandsworth Flying (3, GROVE COTTAGES, S.W.).

HANDICAP Competition by old members Putney Club: 1st, T. Mealand (allow. 16 secs.), 208 secs.; A. Brunsden, 180 secs.

Reigate, Redhill and District (4, LONDON ROAD, REIGATE).

PREPARATIONS in the workshop for several competitions and exhibitions coming along is the order of the day. Three members are busy on the full-size biplane glider, which is rapidly nearing completion. Flying at Earlswood and Buckland, Saturday (to-day) at 3.30 p.m.

St. Mary's Model Club (32, BEECHAM ROAD, PORTSMOUTH).

WEBB secured his third-class certificate during a break in bad weather. Business meeting June 20th at 8 p.m.

Scottish Ae.S. Model Aero Club (6, MCLELLAN STREET, GOVAN).

LAST week, at Whiteinch Pond, Mr. Arthur raised club hydro-aeroplane duration record to 19 secs. Mr. Balden had quick get-off in 2 secs. and flight 13½ secs. Saturday unofficial hydro meeting at Maxwell Park. Mr. Balden's best from water 16½ secs. in the air. Mr. J. S. Gordon's machine with torpedo floats showed terrific speed on water, but lacked supporting surface for getting off. To-day (Saturday) distance and duration competition at Paisley Racecourse, at 3 p.m. sharp. June 22nd, hydro-aero meeting at Whiteinch Park.

Sheppey Model Aero Club (40, WOOD STREET, SHEERNESS).

LAST week, Foster, Fuller, Irons, the Harris Bros., flying on Botany Road. Flying to-day (Saturday) same place.

South Norwood (240, HOLMESDALE ROAD).

FLYING during week by Streeter and Hooker (Dunne type), Daniels and Whenham testing new type.

Windsor Model Flying (10, ALMA ROAD).

SUNDAY, inter-club contest at Aldershot, eliminating trials to-day, Saturday, in Home Park.

SCHOOL AERO CLUB.

Southgate County School Ae.C. (84, BOWES RD., PALMER'S GREEN).

DURATION competition, June 29th, 10.30 a.m., at Powys Lane. Formula:—Duration × weight of model

Weight of rubber.



CORRESPONDENCE.

The Pilot's Position on Aeroplanes.

[1577] In reply to Capt. J. A. Chamier's enquiry (1555) relative to the massing of the pilot and engine weights closely together to reduce the "moment of instability," I notice the marks of parenthesis implying some doubt in the statement, and take it that, in balancing, the moment of inertia is intended, and the character of the stability at 5 and 10 ft. desired.

A test for this is to set up a see-saw with an extension at one end to form an elevated tail, and set up head to a wind. Assume the fulcrum to be the CP-CG, and load up with pilot 2½ ft. behind, and a weight 2½ ft. forward that balances to correspond with the engine. Then double these distances, and compare results—better still quadruple them. The comparisons made will be found closely allied to long and short pendulum facts as to the time required for recovery, viz., the long pendulum, and the long see-saw equally are slow recovering from their vertical or horizontal zero.

Consequently the greater distance apart gives a pilot most time in which to counteract oscillation as the engine (or pilot) moves through fewer degrees in a given time.

If of open V formation, both types, in my opinion, possess equal stability, the concentrated type being the quickest in its oscillations if disturbed from its zero either by gusts or under control.

I have observed a local pilot on a stable machine who habitually switchbacks, and have seen cinematographs of the late Wilbur Wright doing the same. Curiously the information I received in both cases was that both flew this way to make the best of the wind gusts, but this does not fit in with calm weather flying, so I conclude both machines (equally stable) have an amplitude of oscillation affording pleasure to their pilots.

Constructionally, neutral surfacing and elevators possessing the correct leverage consonant with their area from the fulcrum CP-CG, in non-lifting tail types, and suitable to the disposition of the pilot and engine weights, may be designed to slow quick or quicken slow oscillations to some extent, so that the precise effect at 5 and 10 ft. is difficult to particularise generally as so much depends upon what oscillation corrections are provided or allowed.

One point that should be noticed is that the moment of inertia is not of these weights in one direction but of engine downward and pilot upward or vice versa whether arranged to pivot longitudinally

or transversely. In the case of the Wright biplane the amplitude of longitudinal oscillation is governed solely by the open V of elevator and main planes, the moments of inertia are greatest laterally and so require more powerful warping controls than other machines to quicken up lateral oscillations, otherwise the machine would be quick longitudinally and slow laterally, which would be rather a nuisance, it being better to have both controls of equal time for amplitude whether they be both quick or both slow but medium for preference.

Southport Aerodrome Co.

JOHN GAUNT.

The Design of the Military Scouting Aeroplane.

[1578] It would appear from Capt. J. A. Chamier's article on the design of Scouting Aeroplanes, that there are still two schools of thought on this subject. General Henderson in his lecture pointed out that a purely speed machine, might under certain conditions render valuable service, but as these conditions rest very much on the goodwill of the enemy, whose opposition to such scouts obtaining any valuable information is not likely to be of the haphazard description required, the Speed School must go. General Henderson pointed out that with the successful application of wireless this would be the case, and this we may, so far as the construction and design of future machines, is concerned, take for granted.

Speed must always remain a factor, as in a cruiser, and a purely speed machine may be useful within one's lines to carry orders, &c., to detached troops, but with the arming of the aeroplane scout it must disappear as such.

One can see that sentry duties will have to be performed, and that the organization and tactics of our Flying Corps, will require careful consideration, and that the K.Y.E.O.D. has a new meaning, for while the dirigible has little to fear from the unarmed speed 'plane, it, with its searchlight and steady gun platform would prove its most formidable enemy.

Again a speed 'plane would not have one armed 'plane to contend with, seeing that its goal is the enemy's lines, but several, in addition to one or two dirigibles, in fact if the enemy were acting on the defensive the whole of his aerial forces, which we must presume are disposed to the best advantage to defeat its objective.

The most desirable qualities of the future scouting 'plane, are I should say:—1. Two-seater; 2. Armed; 3. Fitted with wireless; 4. Speed; 5. Silent; 6. Armour; 7. Variab. speed.

With values in that order; 4 and 5 may under certain conditions change places, and 7 may be placed 4th. Could a reliable system be devised that would materially affect the speed, its ammunition carrying and bomb-dropping capabilities must come after those seven points; the first three of which are essential to its existence as a scout.

Worthing.

FRANK W. B. HAMBLING.

Airships.

[1579] Re letter 1570. Your correspondent makes some statements which I, for one, cannot pass without comment. Under ideal weather conditions, which might occur half a dozen times in twelve months, and which could not be counted on, an airship might get from a near point of German ground—two hundred miles would be about the minimum distance—to some harbour of ours; it might even carry explosives, though the chances are against that. Even so, the airship could not drop any great quantity of explosives without destroying its own stability, and rendering a return voyage impossible.

But ignoring the airship's many other troubles, it would have hostile aeroplanes to contend with. I argue that an aeroplane could successfully attack a dirigible; this contention was proved at the French manoeuvres. The speed of the aeroplane would render it a difficult target while it was attaining altitude, and once a distinct advantage in height was gained it would be able to manoeuvre in security above the envelope, invisible to the airship's crew and able to destroy the enemy at its convenience.

Also in naval as well as military work the aerial section for some years to come will have scouting and dispatch-carrying for its task, or, at any rate, so say the authorities. Here again the greater speed and comparative invisibility of the aeroplane would count for more than the carrying capacity of the airship, while, even more important, its availability during comparatively rough weather would place it in a far better position than its rival.

Whitehaven.

K. A. H.



NEW COMPANIES REGISTERED.

Private Companies.

Aircraft Manufacturing Co., Ltd., St. Stephen's House, Westminster.—Capital £14,700, in 14,000 preferred ordinary shares of £1 and 14,000 deferred ordinary of 1s.

Breguet Aeroplanes, Ltd., 1, Albemarle Street, W.—Capital £30,000, in 29,000 ordinary shares of £1 each and 4,000 deferred shares of 5s.

Naval Aviators Visit Walmer.

ON a Short biplane Capt. Gordon and Lieut. Courtenay on Friday of last week flew over from Eastchurch to Walmer, landing on the Royal Marines' drill ground at the latter place. During the afternoon it was intended to give demonstration flights but a marine put a foot through one of the planes. After repairs had been carried out the machine was taken over to the golf links at Sandwich and in landing there was damaged through collision with a post.

Nardini Meets with Disaster.

AFTER being delayed by the weather, Nardini on his Depardussin monoplane set out to fly from Dover to Hendon on Saturday afternoon in order to take part in the race round London. When near Rainham, Kent, his machine caught fire, and a hurried descent was made in a field. Fortunately the pilot escaped with a few cuts.

Hirth Wins the Berlin-Vienna Prize.

ON Saturday night the neighbourhood of the Johannisthal Aerodrome presented an unusual appearance, as great crowds of people made their way to the Aerodrome in order to see the start of the flight to Vienna, which was timed for 3 o'clock on Sunday morning, at which hour about 300,000 people were present. A thick mist delayed the start, and it was not until 4.20 that Lieut. Von Thuna was given permission to get away. He was followed at two minute intervals by Thelen and Hirth, and subsequently by Stanger, Csakay, Bergmann, Lieut. Bier, Lieut. Blaschke, and Krieger. Thuna and Krieger did not leave the Aerodrome, Thelen landed two kiloms. outside it, whilst Hirth made his first stop near Guben, 99 kiloms. from Johannisthal. He restarted and reached the official control at Breslau at 8.50. Lieut. Blaschke and Bergmann also arrived at Breslau. The second part of the journey was made on Monday, and Hirth completed it in a non-stop flight in 2 hrs. 55 mins. arriving at Vienna at 6 am. His flying time for the full journey, 663 kiloms. (418 miles), from Berlin was 5 hrs. 36 mins. He used a Kunkler Taube monoplane, the wings of which are covered with Continental fabric, and he carried Lieut. Scholler as passenger. Hirth was the only competitor to complete the journey, although Lieut. Blaschke nearly succeeded in doing so on Monday night. In the darkness, however, he could not discover the landing ground, and came down in a field a few kilometres short of the proper place.

Aeronautical Patents Published.

Applied for in 1911.

12,005. M. F. SUETER and F. L. M. BOOTHBY. Automatic stabilising device.
26,810. R. BROCKLEHURST. Flying or gliding machines.
29,108. M. MÜHTE. Flying machines.

Applied for in 1912.

5,630. J. J. DILLON. Flying machines.
6,761. H. L. WILLOUGHBY. Aeroplane engine-controlling mechanism.

PRINCIPAL CONTENTS.

	PAGE
Editorial Comment	53 ^o
The Aerial Derby.	
The Accidents Investigation Committee.	
The New War Minister.	
The First Aerial Derby	531
The Aerial Derby. By a Passenger	536
Royal Aero Club. Official Notices	538
The A.C.C.F. Grand Prix	538
The King and Aviation	539
Air Eddies. By "Oiseau Bleu"	539
From the British Flying Grounds	540
British Notes of the Week	542
Airship News	542
Foreign Aviation News	543
Struts	545
The Aero Engine. By G. H. Challenger	548
Models. Conducted by V. E. Johnson, M.A.	549
Progress of Flight about the Country	551
Correspondence	551

FLIGHT.

44, ST. MARTIN'S LANE, LONDON, W.C.
Telegraphic address: Truditur, London. Telephone: 1828 Gerrard.

SUBSCRIPTION RATES.

FLIGHT will be forwarded, post free, to any part of the world at the following rates:

UNITED KINGDOM.

	s. d.	s. d.	
3 Months, Post Free	1 8	3 Months, Post Free	2 9
6 " " " 3 3	6	" " " 5 6	
12 " " " 6 6	12	" " " 11 0	

Cheques and Post Office Orders should be made payable to the Proprietors of FLIGHT, 44, St. Martin's Lane, W.C., and crossed London County and Westminster Bank, otherwise no responsibility will be accepted.